15 NATIONALS PICTURES - WYLAM LOCKHEED VEGAS

MODEL ARPLANE NEWS

NOVEMBER 1955 - 35 CENTS

BRISTOL PIGHTER

here are the WINNERS!

1955 NATIONALS Los Alamitos, Cal. Again, for the fourth time, Top Flites and Power Props won <u>more</u> events in the Nationals <u>than all</u> the other makes combined. Fly with a sure winner!

A pair of Top Flite winners from Yuba City, Calif. GARY GRENOBLE (left) beat the best in ½A F.F. JR with his Shorty. Swung a 6-3 POWER PROP on his Atwood .049 with Ohlsson Gold Seal go-juice. Time, 16:34. DAVID ARNE bagged first in A F.F. JR with an Ohlsson Gold Seal 2000 bang-watered Cub .09. His Jasco Rival clocked 14:00 behind a 7-4 TOP FLITE to make him Junior National Champ!





10 8





V₂ A SPEED JUNIOR Michael Obryan Detroit, Mich. Speed 73.95mph Engine Thermal Hopper Fuel Home Brew PROP 4¹/₂-T POWER PROP Plane Original



A GAS F.F. OPEN John D. Nogy Denver, Colo. Time 18:00 Engine Atwood .051 Fuel K&B 1000 PROP 6-3 POWER PROP Plane Josco Streak



C GAS F.F. JUNIOR Jack Linn Los Angeles, Calif, Time 16:36.0 Engine Torp 32 Fuel Ohlsson 200 PROP 10-6 POWER PROP Plane Modified Zeek



PAA-LOAD OPEN
L. T. Everett
Long Beach, Calif.
Time 14:25.2
Engine Thermal Hopper
Fuel Thimble Drome Racing
PROP 6-3 POWER PROP
Plane Pavee



INT'L PAA LOAD JR-SR Robert Patchin Hawthorne, Calif. Time 11:42.3 Engine Torp 15 Fuel Thimble Drome Racir PROP 8-31/2 TOP FLITE Plane PAA-Sir

E.D

THICKOL



TOP FLITE

STUNT OPEN Bob Palmer Burbank, Calif 362 points Engine Veco 35 fuel Exothermic 28 PROP 10-6 TOP FLITE Plane Thunderbird

FLYING SCALE SENIOR Jim McCroskey Iredell, Texas 294 points Torp 29 engine Fuel Fox PROP 9-5 TOP FLITE Plane F-51

B GAS F.F. JUNIOR Bob Johnson Riverside, Calif. Time 14:07.8 Engine Fox 29 Fuel K&B 1000 PROP 10-6 TOP FLITE Plane Modified Spacer

PAA-LOAD ENDURANCE Richard Heist Fort Worth, Texas Time 1 hr. 8 min. 14.6 sec. Engine Torp 15 Fuel Powermist PROP 8-6 POWER PROP Plane So-Long-Gone 1/2 A SPEED SENIOR
Mike Dawson
Galesburg, III.
Speed 79.29 mph
Engine Thermal Hopper
Fuel Thimble Drome Racing
PROP 41/2-6 POWER PROP
Plane modified Whirlaway

FLYING SCALE OPEN Thomas Dean Corpus Christi, Texas 344 points Engine Cameron 19 Fuel K&B 1000 PROP 9-6 TOP FLITE Plane Aeronca Crop Duster

B GAS F.F. SENIOR Bob Gelvin Topeka, Kansas Time 16:56 Engine Torp 23 Fuel K&B 1000 PROP 10-31/2 TOP FLITE Plane Spacer

FLYING SCALE F.F. JR-SR Robert Gelvin Topeka, Kansas 85 points Engine Wasp .049 Fuel K&B 1000 PROP 6-3 POWER PROP Plane Longster "Wimpy" COMBAT JUNIOR
Michael Burke
Louisville, Ky.
520 points
Engine K&B 35
Fuel Exothermic 28
PROP 10-6 POWER PROP
Plane mod Trixter Profile

NAVY CARRIER SENIOR Clyde Hamilton Bellflower, Calif. 377.47 points Engine Torp 35 Fuel K&B 1000 PROP 9-6 POWER PROP Plane Grumman Guardian

C GAS F.F. SENIOR Don Geisler Monterey Pk., Calif. Time 27:26.0 Engine Torp 32 Fuel K&B 1000 PROP 10-6 TOP FLITE Plane Civy Bdy 61

FLYING SCALE F.F. OPEN But Hill Capistrano Beach, Calif. 213 points Engine Atwood .049 Fuel K&B 1000 PROP 6-3 TOP FLITE Plane Berkeley Sup. Cruiser Plane Berkeley Sup. Cruiser COMBAT SENIOR
Jim Leverett
Glendale, Calif.
560 points
Engine Fox 35
Fuel V&O
PROP 5-8 POWER PROP
Plane Original

NAVY CARRIER OPEN
R. M. Post
Fresno, Calif.
391.93 points
Engine McCoy 29
Fuel Powermist
PROP 9-7 TOP FLITE
Plane Grumman Guardian

R.O.W. GAS JUNIOR Jack Moreland Long Beach, Calif. Time 12:31 Engine Space Bug .049 Fuel Thimble Drome Racing PROP 6-3 POWER PROP Plane Orig. by J. Osley

RADIO CONTROL (rudder) Edward L. Friend Las Cruces, N. M. 764/a points Engine Fox 25 Fuel Olhsson 200 PROP 11-4 TOP FLITE Plane Live Wire Crusier COMBAT OPEN
Donald R. Smith
San Bernardino, Calif.
540 points
Engine Fox 35
Fuel K&B 1000
PROP 10-6 POWER PROP
Plane ½ Fast

1/2 A GAS F.F. SENIOR
Don Alberts
Albuquerque, N. M.
Time 36:00
Engine Atwood .049
Fuel Thimble Drome Racing
PROP 51/4-4 POWER PROP
Plane Privy Boy

R.O.W. GAS SENIOR Jack Thomas Garden Grove, Calif. Time 12:58 Engine Torp 15 Fuel Home Brew PROP 10-6 TOP FLITE Plane Modified Spacer

RADIO CONTROL (multi) Alex Schneider San Francisco, Calif. 156% points Engine Spitfire 60 Fuel Gas & Oil PROP 14-5 TOP FLITE Plane Modified Piper Cul FLYING SCALE JUNIOR Gary A. Cummings Fort Worth, Texas 183 points Engine 2 Torp 32's Fuel Cheminol #2 PROP 16-6 TOP FLITE Plane B-26

NEW RECORD 1/2A SPEED Jerry McClung Abilene, Texas Speed 79.24 mph Engine Thermal Hopper Fuel Thimble Drome Racing PROP 41/2-6 POWER PROP Plane Mini-Whirlaway

HELICOPTER Parnell Schoenky Kirkwood, Mo. 213.79 points Eng. Atw'd .049 & Jetex 350 Fuel Cheminol AA PROP 6-3 POWER PROP Plane XH-4 and JH-5



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New Focke-Wulf 190A3 8%;

18-24 124; Grumman Helloat F6F 10%; Mitsubishi 8-06 10;

18-24; Grumman Helloat F6F 10%; Mitsubishi 8-06 10;

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TBF1 13%;

18-24 1

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Finest plans at lowest prices! Figure after model is wingspan inches; CL-con-trol line; FF-free Right; smB-small class B angine; IgC-large class C engine. CONTROL LINE SCALE MODELS

1 inch = 1 ft. size; complete description Packet #10PP — FIGHTERS — All ABsmC: Hawker Typhoon 38½; North Amer. Mustang P.51 36½; Spitfire 1X 37; Focke Wulf 190A3 34; Vought

phoon 3B½; North Amer. Mustang P.51 36½; Spitfre IX 37; Focke Wulf 190A3 34; Yought Corsuir 38. 72 Focke Wulf 190A3 34; Yought Corsuir 38. 12PP—FIGHTERS: Ball Kingcobra P.63 37½ ABsmC; Masserschmitt 109 32 ABsmC; P38 Lightning 52 BC; Howker Tempest 34½ ABsmC; Pouglas Dauntless SBD 40 ABsmC. Packet #14PP — LIGHTPLANES — All AB: Piper Sky-cycle 30; Johnson Rocket 31; Globe Swift 29; Ercoupe 30; Culver V 29. Packet #15PP — NATIONAL AIR RACERS: Gee-Bee 25AB; Heward Ike 30 IgBc; Pesco Spec. 25 BC.

Z/In Tear of Publication

MODEL AIRPLANE NEWS

JAY P. CLEVELAND, President and Publisher

NOVEMBER 1955

Vol. LIII-No. 5

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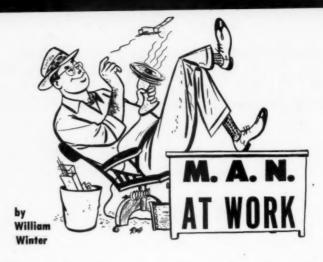
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▶ For the second time in 20 years, was forced to miss a Nationals. Thus it was that Paul (Civy Boy) Gilliam, photographer and mad modeler, did the nifty story and pix coverage featured in this issue. But so many guys have briefed us on the Nats that MAN at Work, sipping iced coke in the New York salt mines, probably knows more about this meet than many he attended.

For instance: with Bob Moncrieff, had hoped to present a record-breaking Cargo job. Bob had toted over 30 oz. and we all know that this was about tops. (George Gardner kibitzed by phone, saying Frank Ehling once wildly claimed that someday we would lift 20 oz.!) Then Leroy Cox does something really spectacular to his Space Bug and the ice wagons suddenly stay aloft the required 40 seconds with over 40 oz. Now MAN is interested in Jim Lang's Cargo job which broke Bob's record by some 10 oz. Jim has the Nats wrapped up, his ship disassembled, when never-say-die C. O. Wright, who gives the kids their lumps regularly every year, makes good with better than 41 oz. Jim takes out his crate, sticks in a monstrous 44 oz. load, then gets caught for 8½ minutes in a thermal. Timer says 21-second motor run. By the time Jim gets back with the tantalizing soarer, the event is over.

over.

Kibitzing by mail, F. L. Swaney of Swaney's Hobby House, Long Beach, Calif., says Lang should be able to stay airborne with 50 oz. That would be a power loading of 1,000 oz.! Or take the story of Jimmy McCroskey, who again won ukie scale with his Mustang, the same ship that was featured in MAN (May '55)

after his last Nats win. Thieves broke into Jimmy's home after the Nats and made off with the priceless ship. Jimmy says he is a brokenhearted kid. But let's leave the Nats to reporter Paul.

"On the right track with models like the Cutlass and Diamondback," says Chuck Wood of Seattle, Wash., about MAN'S August issue. "There is a returning interest in solid models and small class, simple rubber jobs. In England," continues Chuck, "there is a revival of WWI solid models by various manufacturers. These little ¼ in. scale solids are similar to our own pre-war Hawk and Maircraft models, like the Camel, the Fokker D-7, Bristol Fighter, etc. Balsa parts are cut to outline, cast props and guns, decals and well detailed plans. I can remember as a youngster buying and enjoying building models like these and what excellent training they were for bigger and more difficult kits!"

Prediction: the British will discover

▶ With all this talk about plastics and ready-to-fly models, was interested to learn that Comet Model Hobbycraft has found it profitable to maintain built-up kits since the war era, C.O. Wright's nice flying T-Craft in the last issue was developed from a corresponding kit plan in Comet's P series. That kit was designed originally by Ioe Konefes, which should ring a bell with old timers. Ioe made the wonderful 40-odd minute flight with his Buzzard Bombshell at a pre-war Chicago Nats—(Continued on page 6)

NEXT MONTH'S COVER



The two-place Bristol F2B fighter was one of the great fighting machines of World War I. Armed with a fixed forward firing Vickers, swivel mounted Lewises in the rear cockpit, it had the power and maneuverability to mix it with single-seaters. Power 200 to 275 horses, top 125 mph, span 39 ft.-plus. Also ground attack.





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PT Trainer 26" A-8 Quest 10" 8 Quick Silver 32" .14 to .39 Racetor 46" A-8-C Red Davil 18" .038 to .074 Rodskin 31" A-8 Ringmaster 42" B-C Ringmaster Jr. 30" AA

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MODEL AIRPLANE NEWS . November, 1955

MAN at Work (Continued from page 2)

will never forget it. The club (was it the Buzzards?) had made a couple of dozen Bombshells, every one beautifully built, resplendent in black and orange. Remember Gordon Christoph of Aircraft (who made Buzzard kits afterward, as did Dick Mair again after the war) explaining that

Mair again after the war) explaining that the polyhedral was to roll the ship upright if it ever got on its back on the way up? Gordon is now plant manager for Lindberg Products, Inc.

Well, to make it short, asked Grace Vetter of Comet to fill us in on the current P series and hers is the next voice you will hear: "These kits employ Comet's backbone type construction. Fuselage side contour strips are pinned in position and contour strips are pinned in position and left or right half-formers are cemented in between the strips. Corresponding half-formers are added to the structure when it is removed from the plan. Basswood 1/16 sq. strips are furnished for all stringers. The weight is comparable to hard balsa and these are of uniform rigidity. Balsa strips are not consistent in this respect. This change was made during the war when balsa supplies were limited; but because the modelers favored it, it has remained the same.

'Models in the line have been modi-Models in the line have been modified many times before. A common practice is to plank the fuselage with 1/16 in. balsa between all stringers. Wings and tails were planked with 1/32 in. balsa. This of course provides excellent strength which is desirable of a gas model and a which is desirable of a gas model and a scale looking appearance since modern aircraft have the 'aluminum skin' look. Further, it is a wonderful base for a pretty paint job."

► Thank you, Grace Vetter. You know, we here at MAN are proud of the wonderwe here at MAN are proud of the wonderful history of the magazine and quite often are asked for the story for trade magazine consumption. It seems to us that someone should tell the Comet story. You'd be surprised how many top flight designers have come out of Comet. Several of today's most illustrious manufacturers, noted for quality products, are Comet alumni. Wonderful airplanes, like the Zipper, the Sailplane, were the undisputed tops for their day. Beginning with the proverbial shoe string in the disputed tops for their day. Beginning with the proverbial shoe string in the late 'twenties, Comet became during the war a kind of "General Motors" of the model business. Remember the Comet .35 -and was that ahead of its time? Are you daydreaming? The good old days? Built-up kits? Famous scale model kits?

Probably the most famous name of all, for flying scale models, was Cleveland Model & Supply Co., operated by the Pachasa family. MAN readers keep asking for old Cleveland kits and drawings. Now we see that Ed Pachasa and Cleveland we see that Ed Pachasa and Cleveland have courageously revived a walloping line of their old timers, including the DH-4, Curtis JN-4, SE-5, Fokker D-8, Howard Pete and many others. Cleveland plans, incidentally, were always collectors' items. If you have been trying to get good detailed drawings of some of these old crates, here's your opportunity!

If we modelers want things like these, we are going to have to fight for them. The trade isn't interested enough to handle this type of model. Ready-to-fly jobs, plastic kits they understand. Pretty boxes they (or you?) demand. Only massive runs

can minimize what the individual modeler has to pay for his pretty box. Cleveland is packaging these kits for direct mail (Continued on page 37)

Flash News

Many developments push back the air frontier — this monthly report will keep you in the know.

V

By JOHN F. RUDY

► The Leduc 022 Mach 2 fighter . . . The guided missile in 1918 . . . The Pantobase plane . . . STOL . . . Alfa-Bravo-Coca . . . Operation Franklin . . . Dig that crazy stuff! But you'll be hearing more about all these items.

Who will have the first successfully operational Mach 2 plane? France bets on its *Leduc 022* (by inventor Rene Leduc) Mach 2 fighter. A ramjet of interesting detail, its wing is solid; fuselage is a fat, hollow duct forming the engine to which a central core is attached carrying a cockpit in the form of a proboscis. A centrally-placed gas turbine serves as igniter, drives fuel pumps (16,000 gal. an hour at top speed of 1,450 mph) and other accessories. The turbojet engine by itself provides enough power for take-off and operating speeds of 200 mph.

Some idea of power is gleaned from the plane's equivalent of 141,000 lb. of thrust at an over-all propulsive efficiency of 23 per cent (about the same operating efficiency as in a motor car). The plane operates well at 80,000 ft.

When Rene Leduc first proposed the thermo propulsive duct a quarter of a century ago, he was probably called the then modern equivalent of screwball. Even in 1938, when he had designed a full scale ramjet that would exceed 600 mph and reach 80,000 ft. with a thrust equivalent of 10,000 hp, few believed and most doubted.

Perhaps it's understandable that we tend to feel that our own era is seeing all the new aviation developments. But only recently this column was privileged to look at notes of England's famed Prof. A. M. Low. Even the Russians cannot take away his honors of having either invented or helped invent: in 1917, a flying bomb; in 1918, a guided missile. In those two years Low and his associates put together a successful electric-driven gyro, a wireless guided rocket quite similar to that used by Germany in 1942.

Our old friend Mike Stroukoff, of boundary layer control fame, is back with something new, the *Pantobase* plane. Actually, it's a C-123 assault transport modified to take off and land on just about anything from snow to water. Oh, yes, the name. Comes from the Greek, *Panta* or *Pan* meaning "all" and *base* meaning "surface." An "all-surface" plane might be an easier way to describe it. Water skis and wheels are used interchangeably. But veins protrude from skis under the water, almost giving a wing lift effect in the water to boost the 17-ton modified C-123 onto the skis for take-off run. The latter is a 30-second run for 1,000 ft.

The modified C-123's (six are planned, to date) will also have the boundary layer control device—blowing and inhaling air over the wings to reduce take-off and landing speeds. Combination of both developments will give the C-123 tremendous operating versatility.

STOL is another of those funny words you'll be hearing more about. It means Short Take-Off and Landing aircraft. Fairchild does the special Navy studies on such a transport plane. The Admirals want a plane with very wide speedratio characteristics.

Fairchild also has plans for a light jet transport for hurried and harried executives. For the moment the 560 mph job is known as M-225. It will have a crew of two, carry seven in comfort, combine high speed with the safety characteristics of the slower transports.

In this corner we have that agitating newcomer, Alfa-Bravo-Coca, championed by International Civil Aviation Organization (ICAO). It is a contender for the Able-Baker-Charlie designations of venerated memory. Which of the two will prevail on air identification maps? A recent private survey shows pilots like Able-Baker-Charlie, but it promises to be a hot fight.

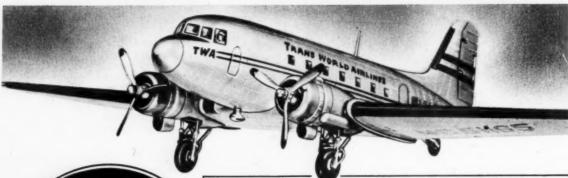
Operation Franklin will be big and important, but we bet you won't hear much about this helicopter reconnaissance of the geology of Canada's far north Queen Elizabeth Islands. About 120,000 square miles will be covered. The 21 geological experts with their tons of equipment will be entirely airborne (huh, hardly any other way to get there). There's a suspicion of vast uranium reserves, oil, gas and gold.

Aviation helps save millions of dollars in our national forests but aerial spraying is so common today that the biggest project of its kind has gone virtually unpublicized. Under Forest Service auspices, planes sprayed some 2.3 million acres of timber threatened by the Spruce budworm in Oregon, Idaho, Montana and New Mexico. Cost of about \$1 an acre saved timber with a local lumber value of \$750-million.

Every month we ask ourselves when the new plane designs will stop. Scanning scores of news releases, looking over notes from many telephone conversations and similar contacts, we'd say developments are endless: more attention to variable take-off designs, for example. Douglas, for one, rejects the idea of using 'copters for short range commercial transport work, will work on a fixed wing VTOL (Variable Take-Off and Landing).

Also barely noted was the July 15 birthday of the Boeing 707, first jet transport. The Kc-135, 95-ton plane flies at better than 600 mph, will become an 80 to 135 passenger Stratoliner, operating in 1959.

Newest four-place business (Continued on page 40)



Magnified Detail of Sculptured Figures!

These realistic figures—scale size Pilot, Co-Pilot, Hostess and Passenger—are included in each DC-3 kir (photos enlarged for your convenience). Movable door with stair ramp on inside, also included. These are samples of the fine detail.and realism molded into every part.

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Four Star Plastikit



Ron St. Jean appears to have his Ramrod charmed at is leaps off for spectacular VTO. Reporter thought it best of the original free flights.



Ducted fan helicopter design by C. A. Schuchmann flew out of slight overhead on Atwood .049. Big rhubarb: 'copter, saucer, or what?

Early to bed (in the morn, that is), Jim Carpenter does an Australian crawl through sea of Civy Boys, rubber jobs, pieces of wood.



The 24th Nationals

Held for the second time in California, with the Navy acting as host, the 1955 National Model Airplane Championships, or "Nats," was labeled the very best run so far.

➤ The twenty-fourth National Model Airplane Contest was held July 18 through 24, 1955 at the Los Alamitos Naval Air Station. It was truly an exciting meet, even with the fantastic Disneyland (which is only a few miles away) opening its gates the same day the Nationals began.

Some 855 contestants flew in this 1955 affair. The average of event entries per contestant was logged at 3.8 Despite the rather small number of contestants, who were mainly from the California area, it was a vigorous and highly competitive contest. Approximately 75 contestants made the trip across the country from the eastern states, with almost 200 from the midwestern area. There were 17 foreign entries,

The 1955 Nationals will surely make history in many ways. The operation of the meet by the Academy of Model Aeronautics, the U.S. Navy and Southern California model leaders was outstanding. The weather was excellent, balmy-foggy morning with the ocean breeze coming in at noon. More new records were set at this contest than any other previous National Contest. Flight times were high in all age groups; competition, keen.

There were dozens of California leader members who were the workhorses of the meet. Special praise must go to Keith Storey, AMA president; Meet Manager Sal Taibi;



Duke Fox chats with Junior stant winner, Edwin May, Jr., who is only 11 years old. So kids are not able to make built-up airplane kits?



Father and son teams abounded. Here, Forrest Allen and son inspect rubber motor in Wakefield model with which Forrest placed second.



Bill Atwood, the engine man, kids with AMA prexy Keith Storey, no doubt about taking another indoor first, this time in stick event.



Ron Atwood, far right, received first trophy of evening for first place win in that paper covered indoor stick. His Dad had better look out!

F. L. Swaney; Mrs. Billie J. Fritchey of AMA; Kenny Aymar; J. L. Ferry; Walt Robertson. The list could go on and on.

The handful of indoor contestants had plenty of room to fly in the spacious Santa Ana blimp hangar. Old master Bill Atwood turned in 21:54 for high time. Bill's son, Ronnie, won high time in Senior paper-covered event. Everyone expected a large turn-out in the paper-covered event; however, there were more mike jobs than paper. Indoor glider times were high but under record performance in Open. Stewart Savage of the Air Force team threw for 1:10. Senior Curtis Stevens, Stockton, Calif., did 1:06 with a flat dihedraled floater—and a great arm.

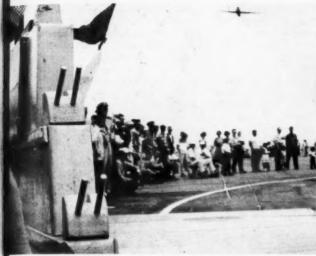
Activity was strong in the radio control event. Over two dozen entries in multi-channel with Alex Schneider, Bill Deans, Dean Kenney and Colby Evatt setting the pace. It was a real nip and tuck affair with Alex Schneider beating out leading Bill Deans an hour before the meet closed. Schneider was using a Rockwood five-channel in his famous modified Cub, powered by a Spitfire .61. Bill Deans' model was a big cabin type original with a reed five-channel and a ring Spit .65, two-speed choke system and (Continued on page 51)

Don Alberts, Senior champ, launches hydro ship from the man-made pool. This same plane did sensational 36 minutes in Half-A class.



10

MODEL AIRPLANE NEWS . November, 1955



Always fascinating to watch—and the Navy pilots get u kick out of this one—is the Carrier event. Guardian by R. M. Post approaches.



The ship that did over 100 in Class Half-A Speed. Mono-Line and a Space Bug. Team: Jim Clem, Sam Beasley, Dale Kirn (flier), R to L.





David Arne, Junior champ gets plaque from Miss Universe. Right— Woody Blanchard, National champ (again!) receives THE trophy from the Secretary of the Navy, Charles S. Thomas. Navy takes interest.





Above—Don Alberts the new Senior champion. At the right is Don Geiler, Senior Class winner in free flight. He had total and high time of 27:26. Actually, many dozens of trophies were given out.

Below, left—Team race winner, Dennis Schauer. Same model won the proto event. Right—John Tatone, second time winner Testor award.





Below, left-Jim Lovrett, Senior combat. Right-Jimmy McCroskey won ukie scale again with Mustang in MAN. Won the MAN trophy, too.





MODEL AIRPLANE NEWS . November, 1955



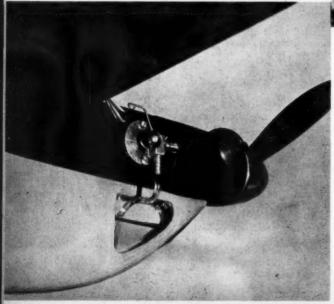
Vertical take-offs are routine with the fast climbing Amazoom. High thrust line and underslung fin just two of many features.

the Amazoom

By STAN HILL

Fourteenth in a series, this surprising free flight goes on from where the designer's well known Amazon left off. It is tops for .15's!

Built-in transparent tank and arrangement of side-mounted Diesel and fuel shut-off timer. The profile fuselage fairs to the spinner.



▶ The Amazoom is the fourteenth in a series of aerodynamically similar ships begun in 1942 out of a desire for more stability under power than models of the day could offer. The more significant developments are described as they affected the characterstics and performance of the basic design. It should be kept in mind that these data are presented as they affected one design and shouldn't be applied indiscriminately to all free flight types.

The first model was not unlike a thinner and longer Powerhouse but, between a dirty engine on every landing and Charlie Grant's influence, the thrustline and CG were raised as much as possible. With center of thrust, CG and center of drag nearly on the same line, the previously tight (and, therefore, power-wasting) spiral climb opened up to a loose one-turn-per-five-seconds while the rate of climb almost doubled. Except for the inevitable effect of careless adjustment, which no ship can entirely overcome, spiral dives under power disappeared.

A tour of duty flying P-47's during the war interfered somewhat with my modeling activities, but did not stop them, and five ships from '44 to '48 showed minor refinements, such as buried belly wheel, higher aspect ratio (8:1), a thinner, more penetrating airfoil and general clean-up re-

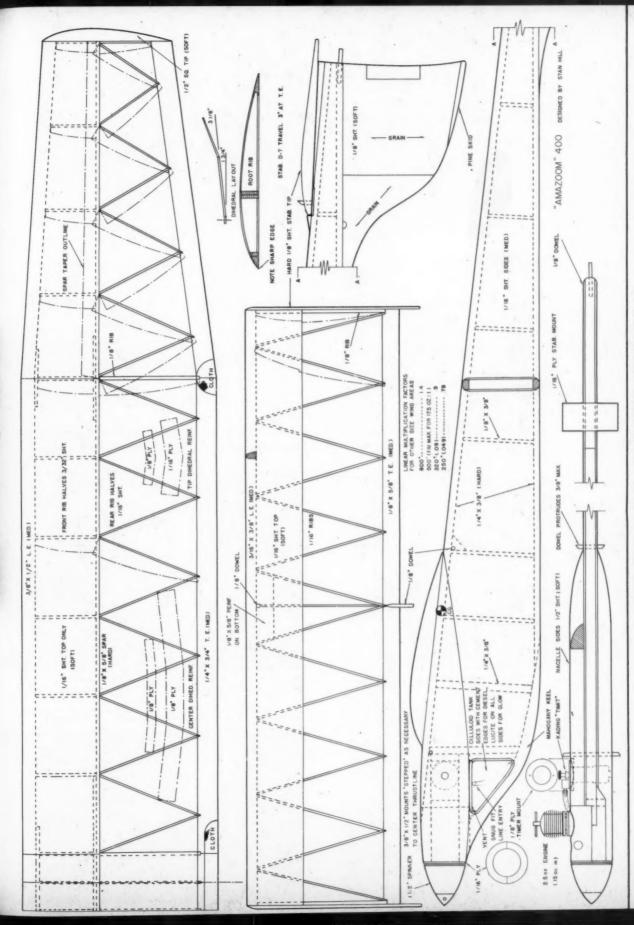


Having designed 1948 version Amazon, Mrs. Hill cheers Stan's super duper Amazoom, one of which she displays here for the camera.

sulting in further stability and about 15 per cent increased performance. Playing around with stabilizer dihedral demonstrated clearly that stab dihedral increased spiral instability, while anhedral created resistance to spiral dives.

In 1948, my wife, basing her work on the latest developed model, designed the Amazon to take advantage of the thennew glow engines. Aspect ratio went to 9:1 (about the limit for a hot ship) and loading went down, giving a beautiful glide. Its construction was a little complex but was exceptionally rigid to stop in-flight flexing and warping in the sun between flights. The second version of the Amazon was modified in structure only and was flown to victory at the '52 Nats.

While we were testing two new ships to use in England at the '53 FAI finals, it became evident that the "balance" of thrust offset against twin rudder offset was a balance at one speed only, with thrust being more effective at a low speed and rudder at high speeds. What was needed was a set-up permitting a good balance of forces at all speeds under power while still maintaining a good glide turn without trick gadgets such as auto rudders or drag (Continued on page 45)



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FULL SIZE PLANS AVAILABLE. SEE PAGE 44.



Two beauties: Veco Thunderbird, left, Edwin May; and modification same plane by Bob Palmer. Both won first in precision. Good finish.



Second place, multi, went to William Deans, Anderson Spitfire, pressure system. As Schneider, Deans had five-channel reed. Built-up frames.



Cargo Clipper jobs, L to R: Bob Moncrieff, Jim Lang, Willard Blanchard, Cargoes went over 40 ounces and talk now is of 50. What is limit?

Bob Evans, right, with his Tiger Moth free flight entry. Engine was an .074 Cub. This DH always makes excellent flier, free flight, lines.





Dean Kenney, left, talks radio with Alec Schneider, who won the multi-control event with the same old Cub. Kenney, third. Big jobs.

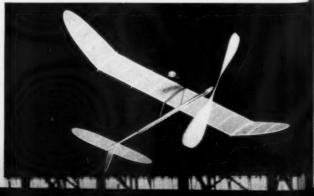
AIR WAYS At the NATIONALS

Unusual designs at modern Nationals are not freaks but pay off ideas with results.



Exciting B-50, Lt. F. H. Nixon, took third in scale points. It was powered by four Japanese Enya .19's. Competition certainly rough!

On the way to 14 minute high time is Joe Bilgri's paper covered stick. All Joe did was recover one of his old mike jobs. Joe steady winner.





Wonderful take-off shot of Dick Baxter's Longster free flight flying scale. Note two dummy cylinders to copy real engine. Model flies well.



Above—Competing in every Nationals ever held, Carl Goldberg releases free flight. Is it a new kit? Right—Unique VTO job in the ROW event.



Unless Tem Dean's engine cuts, his Aeronca Duster is unbeatable. Sheer perfection, this model won Open ukie second time. Back every year!



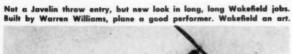
Finest finish in controlline was sported by .29-powered Myers built by John Tatone. Landing gear retractable. Real beauty, fully detailed.



Always near the top, C. O. Wright finally won a Clipper Cargo first. Space Bug-powered, 650 sq. in. job lifted 41¾ oz. Ships will grow.



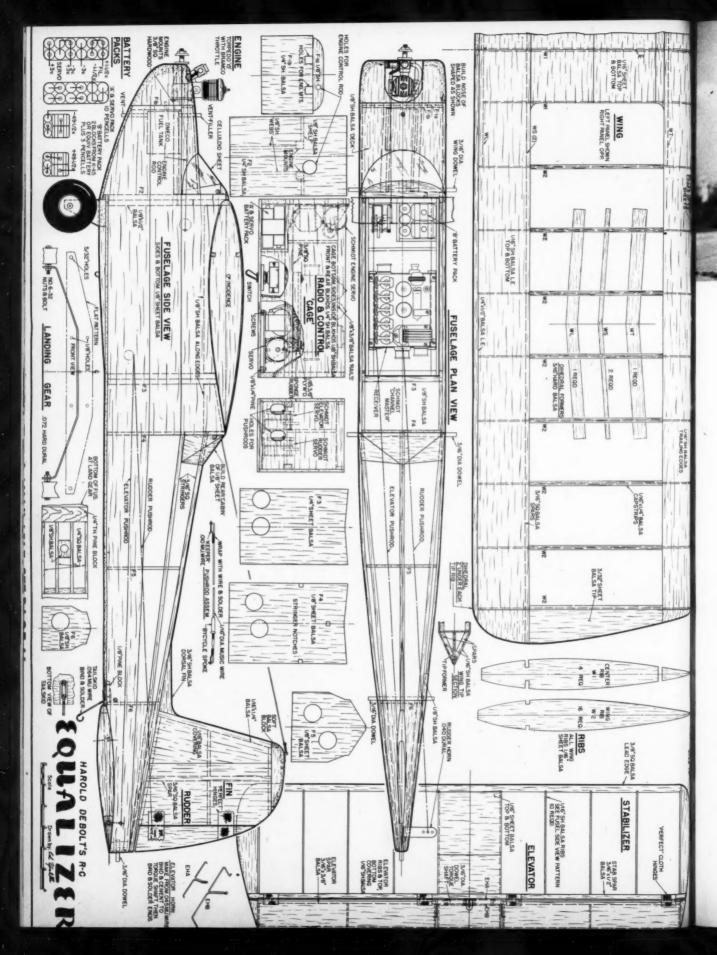
Pan American's George Gardner, right, helps Dick Heist pour fuel for his endurance flight that set new record of 1:8:14.8. 'Round and 'round.

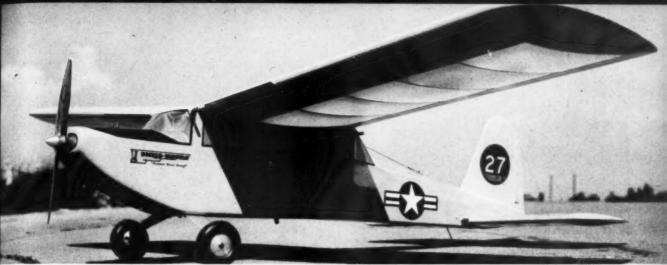












Designed around the Schmidt five-channel radio, Equalizer has left and right rudder, up and down elevators, engine control for fifth.



The Equalizer

Secret of the most successful of designer's multicontrol ships is the light weight, minimum airplane.

By HAROLD deBOLT

▶ Equalizer, you say? 'Tis true, performance is very close to being equal whether flying upright or inverted!

Now that so called "symmetrical" models have come into their own, we can dig into the peculiarities of this sort of design. One of the main requirements, if we are to have equalized performance, is that we use a force arrangement which is close to the same both upright and inverted. With this the model's flight attitude will remain the same no matter how we fly it. Other force arrangements will allow inverted flight, etc., but the difference in the model's attitude will be so great as to make the "symmetrical" type by far the most desirable.

After two years of flying this model it has proved to be one of the best approaches to the problem. With the desired features any symmetrical design is going to be comparatively faster in flight than other types. This is, of course, not out of line if the speed is held within reason. However, it was soon discovered that, if we used wing loadings that were average with other models, the flying speed easily shot high. This means a model which is difficult to launch and one that performs so quickly that you may not have time to think. Thus, a reduction of speed would be a big step forward with this type of model design.

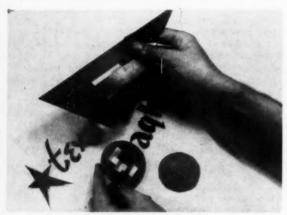
There actually are two ways of reducing the speed: one is to increase the angle of attack of the model so that the wing will create more lift at a slower speed and, of course, more induced drag will result. This was the first method tried and it does work. However, you must put up with a sluggish model and one which may fail in directional stability as a result. In these (Continued on page 40)

Built correctly, the ship will weigh only four pounds with radio and batteries (this is correct). Power ample with K & B Allyn .15.





Shown here are all the materials you need for making the stencil. Almost any camera supply or graphic arts store will have them on hand.



3. The more intricate designs—such as lettering—are prepared on tracing paper using black India ink. Idea can be less "arty."

For centuries artists have used the silk screen process for making reproductions. More recently, screening has been used extensively in manufacturing and in making name plates, posters, drapery fabrics and countless other items used in almost any imaginable field. In the past the technique has been pretty well limited to the artist and to industry for expensive and practical reasons. But now it is possible for individuals or clubs to use a modern, inexpensive, light sensitive film in doing screen work that is really professional looking.

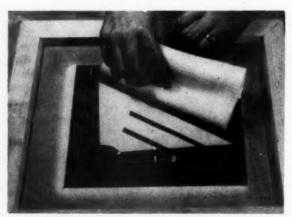
The necessary materials may be obtained in almost any graphic arts or camera store and, in a few evenings, your club can produce its own T-shirts for considerably less than it would cost to have them done by a professional concern.

The first thing you should do is make your frames. These do not have to be particularly fancy but should be made of some sturdy wood, beefy enough to stand the pull of the silk without warping. We usually use a frame made of 1 x 1 in. pine which is mitered at the corners. Make your frame large enough to allow about 2 in. around each side of your club design. Ours was 11 x 14 in., which fitted nicely around the 8 x 10 in. design. It is best to make one frame for each color to be used in the design although each frame may be used again for another color or design by washing out the film stencil.

Silk-Screen Your Own T-Shirts

By HARRY H. ENGLISH & PAUL GILLIAM

Using modern, inexpensive, light-sensitive film, clubs or individuals can manage screen work that is truly professional looking.

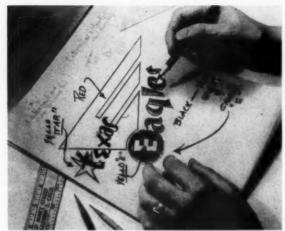


4. The finished film stencil is applied to the silk by pressure from the bottom. Then the excess moisture is removed with a towel.

Twelve-gauge commercial silk screen silk or organdy is used on the bottom of the frame and is applied very tightly with staples or carpet tacks. These materials contain a filler or sizing which must be removed before using. This is done by soaking the material in warm water for a few minutes and then stretching the silk on the frame and tacking. It will then shrink even tighter on drying. Organdy, which isn't recommended, doesn't shrink and should therefore be dry before it is stretched on the frame. The weave of the fabric should run parallel with the frame sides.

Now lay out your club design and decide which colors to assign to the various areas. Each color section is separated from the others by tracing on vellum or thin tracing paper. Patterns or templates are then cut from stencil paper or a light, opaque cardboard. For very delicate work where a template would be difficult to cut—as for your club's name, for example—use black India ink directly on the tracing

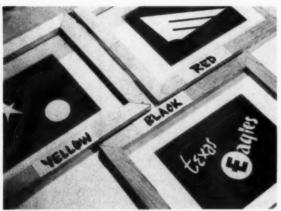
There are several screen process films on the market. We prefer using the du Pont photographic screen process film since it is the easiest to work with—and the toughest. Almost every model club has its own photographers, either amateur or professional, who have a darkroom available for this step of the operation. Lacking a darkroom, you may easily adapt a dark closet equipped with a yellow insect repellent light



Lay out your design roughly and decide which colors will be used . on each area. The wood frames need not be fancy but sturdy.



2. Cut all the templates to the exact required sizes from template paper or firm thin cardboard. Use a single-edged razor blade.



5. Finished screens ready for printing. In this particular job the screens have been marked clearly for yellow, black, red colors.



6. For subsequent operations the T-shirts are folded and pinned around a corrugated stiffener. The bankers pins make it easier.

bulb for exposing the film and a red light bulb for developing. If you prefer, any local photographer will take care of this step and even apply the film to the silk for you for a nominal fee.

Full instructions, of course, are supplied with these kits and no difficulty should arise during this operation. The smallest kit contains ten sheets of 8 x 10 in. film (this is large enough to fit any club design we've seen!) which gives you at least a couple of extra sheets to experiment with. The templates for each color are arranged face down in their proper places on the back, or pebbled side, of one sheet of film and light from a yellow insect repellent type bulb is flashed a couple of seconds to expose the film. All work during this operation except the actual exposure itself is done by the light of a small red bulb. The use of a sheet of glass over the templates and film during exposure will keep any stray light from fogging under the templates.

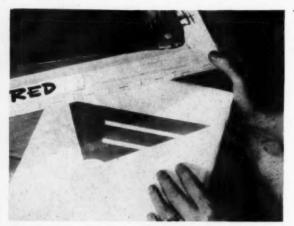
The exposed film is then run through the solutions contained in the kit for the recommended time and the unexposed parts of the film are washed away under the faucet. The film stencil is then ready to be applied to your screen. This is done by laying the film, slick side up, on top of a developing tray or a piece of 8 x 10 in. cardboard and pressing the screen onto it. This cardboard or tray assures good contact between the film and silk. Remove excess water



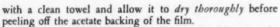
7 Textile ink is applied to the taped-up screen with a small piece of stiff cardboard. Tape you see is just a regular masking tape.



8. The actual squeegee printing operation is simplest of all. Manufactures use this same method for making their own decals.



10. Now two colors have been printed. Commercial squeegee recommended because dull squeegee applies excess color, "bleeds."



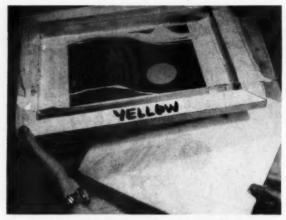
Now cover the inside of the silk with masking tape in all areas not already covered by the film stencil. Be sure to let this tape curve up and lap the edges of the frame to prevent any unwanted excess color from oozing through.

At this point, screw a set of small hinges to the edge of your table or drawing board and hinge on the first screen to be used, allowing for the thickness of the folded shirt (approximately 11/4 in.). These hinges are left mounted to the working board and, as the changes in color screens are made, the hinges are simply removed from the screen frame and remounted on the next frame to be used.

Each shirt to be silk-screen printed is folded around a stiff, corrugated cardboard rectangle large enough to cover the design. This board is left in the shirt throughout all the printing operations and is used as a key guide.

The color used in the actual printing may be any good textile ink or dye, although we prefer a screen process ink called Nazdar, which dries quickly and is fairly inexpensive. Another good textile color is Prang. The ink is applied to the shirts by squeezing through the mesh of the silk with a sharp rubber squeegee. The use of a commercial squeegee is recommended since homemade ones seldom are sharp enough to apply the color properly. A dull squeegee applies too much color and gives a bleeding effect to the shirt.

Before squeegeeing your first shirt, make several tests on



9. One color has been applied to the shirt in this shot. Note how tape is turned up to confine textile ink to the working area.



11. Finished shirts. Because dark colors overlap the light, it is necessary to print light colors first. Dark colors show through light.

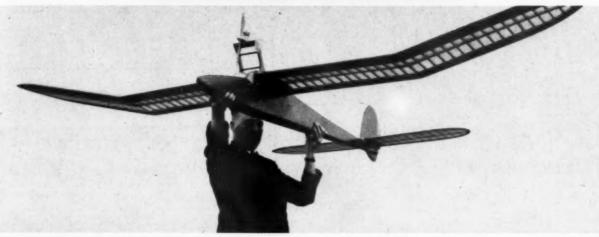
newspaper until the ink makes a good, sharp impression and no longer "bleeds" through the silk. The lighter colors are printed first so that each succeeding darker color will cover any areas which are to be overprinted. Needless to say, each color is printed on all the T-shirts before the screen is cleaned and the next color is printed. At this point we would like to suggest that a bottle of acetone be kept handy for cleaning the screen after each color operation. Never allow the color to harden in the screen or your silk will be permanently ruined.

The areas to be printed are determined by the use of a square cardboard register guide taped to the workboard. The corner of the cardboard on which the shirt is wrapped fits into this guide and, when colors are changed, the guide is changed on the board so that the new color screen overprints the previous color in its proper place on the shirt. Make plenty of tests on scrap newspaper during color changes until you're sure the registration guide is perfectly placed. It's a lot easier than ruining even one T-shirt! After printing all your club's shirts, be sure to clean your screens and save them for future members' shirts.

Following these instructions as well as those in the screen process film kit, coupled with a small amount of experimentation, will enable your club to manufacture its own professional T-shirts inexpensively. At the next contest, watch the members of that rival club stare with envy!

Next month, we'll show you how to make your own decals.

Radio Control News



RC-powered glider by George Davie, Norfolk, England, for long range flying.

Geared Acrotrol escapement, 4,000 turns, 30-ounce tank, .15.



Fine Tiger Moth built by L.A.C. Lock of the RAF has a 56-inch span, weighs two pounds. Power is supplied by an .11 cu. in. Elfin Diesel.



Dewy Golden, Marion Cain, Lafayette, Ind., built this 10-foot Tri-Pacer. Cub on bench another 10-footer. John Campbell, 8-foot 0-46A.

By E. J. LORENZ

Expanded coverage of international RC activities begins this issue. The usual news, new items, technical developments, plus Dazey's drawings, round out the report.

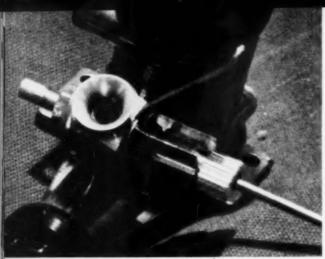


Symmetrical bomber by deBolt—that's son Ronny approving—spans 84 inches, weights 6½ lbs., giving 12-ounce loading on Schmidt radio.

▶ R. E. Schumacher of Babcock Radio Engineering, Inc., points out that the Babcock escapement is capable of handling practically any size of plane. Capt. Ollie Strickland of California flew a 15 lb. Babcock multi-channel equipped plane, powered by a Fox .59, which cruised close to 60 mph by actual measurement. The 16 sq. in. rudder moved about ½ in. each side of center and was not aerodynamically balanced. Using ¼ in. rubber and the heavier spring with three volts, complete control was maintained at all times. Even with speeds in excess of 60 mph, in shallow dives, this unit functioned perfectly.

So far, with the exception of the following item, no one has ever sent in any suggestions for operation of the Citizen-Ship 465 mc receiver, other than substitution of a Sigma 26F relay for the 4F, which has proved superior. Frank Ritchy of East Park, N.Y. showed us his Veco 35 tugboat, equipped with an AR 465 mc receiver. Everything was in perfect shape, including the "radar" antenna atop the pilot house, which extended his range to about 500 ft. The interior hook-up wire from the antenna plug to the A-Minus lead on the receiver was about 1 ft. long. This really did the trick, although the exact configuration and amount of wire used from the A-Minus lead will depend on your particular installation. This antenna actually increased the range by 100 per cent and the set required no retuning. Your editor also reports the

CONTINUED ON NEXT TWO PAGES



This is the Bramco throttle on a Torp. Changing simultaneously both fuel and air, it makes the messy plumbing obsolete. Tried by staff.

use of a wire from the A-Minus lead as being beneficial in picking up the signal (cemented to bottom of fuselage).

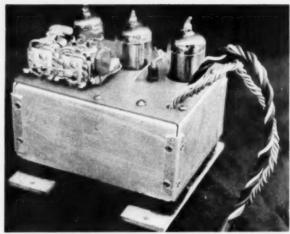
Sent in your FCC registration? If not, why not?

Now that multi-channel flying has finally come into its own, reed receivers will undoubtedly be widely used. Be sure you follow the instructions of the manufacturer when tuning your set. Art Simmons of 124 Baker Ave., Syracuse, N.Y. is really sold on his Schmidt unit now that he has learned and stayed with the correct tuning procedure. Over 40 flights without touching the radio gear in any way. The main trouble is in peaking the reeds too closely to the audio signal.

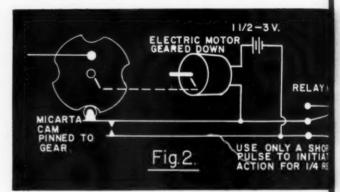
It's too bad we can't have Gil Miles of Croydon, New South Wales, Australia over here for a while. He comes up with some really fine ideas and well made equipment, the latest being the engine speed actuator shown in photos and sketch. This unit was built around a small 11/2 volt motor with an 80-tooth gear and worm drive, the gear being pinned to the cam, which is about 1 in. in diameter and should be cut as shown. This design for the cam proved most reliable since it eliminated any tendency to overrun. The photo shows the unit installed on a throttle control which appeared in MAN earlier this year. Results are said to be perfect. In operation, a short pulse from the receiver relay will start the cam turning for a quarter of a revolution, contact B being closed almost immediately. Each short pulse will turn the cam 1/4 rev. Plenty of power and we see no reason why you'd have to be limited to a four point cam. Note the small roller cam follower, an item similar to those obtained from certain limit switches.

Now that the Nats are over and they have shown that a good multi-channel flier has it all over a good rudder-only man, the same as did the International RC event in Germany, let's look into the matter. In the past, as we've mentioned before, the rudder-only fliers were able to take the multi-channel fliers mainly because of their longer experience in handling their particular equipment. In the meantime, the multi boys have been practicing and now it is a good thing they have a separate entry in the RC event. Before continuing further, we still maintain there will always be a rudder-only event and it is not advocated that a newcomer jump right into a large multi-channel set-up for his first RC model.

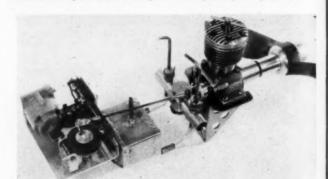
The big question is, how many channels are needed? Some say two, three, five or six. We'll have to wait to see what it all boils down to. However, the most popular equipment in the multi-channel field is the three-channel Babcock and the five-channel Schmidt and the six-channel Bramco units. Then, again, Fran McElwee won the Mirror Meet this Spring with a single-channel (Continued on page 48)



Two-channel T-R receiver by deBolt has four tubes, weighs 6 ounces. Idle is .9 ma, rise 6 ma. A drain is 140 ma. "Can" on sponge mounts.

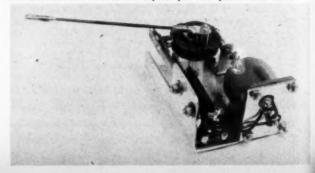


Schematic of engine control by Gil Miles, Australia. Based upon a MAN article by Ted Martin, the system works perfectly. See pix below.



Twin-needle valves replace the rear ED Diesel carburetor. A 1½ volt electric motor with 80-tooth and worm gear drive gives ample power.

Close-up of Miles' engine control unit shows cam follower which works limit switches. Each transmitted impulse provides quarter turn move.



ESCAPEMENT CONTROL SYSTEMS AS USED WITH SINGLE CHANNEL RECEIVERS

ALL SYSTEMS ARE SELF-NEUTRALIZING (RELEASE OF TRANSMITTER BUTTON PERMITS ALL CONTROLS TO RETURN TO NEUTRAL).

(ON UP-KICKER SYSTEM)

UP ELEVATOR = PRESS__PRESS__HOLD

THIS MEANS: PRESS, RELEASE, PRESS, RELEASE, AND PRESS AGAIN, HOLDING AS LONG AS UP ELEVATOR IS DESIRED

RUDDER ONLY Simple, best for first few flights. Add more controls when this is mastered. Either a single or compound escapement

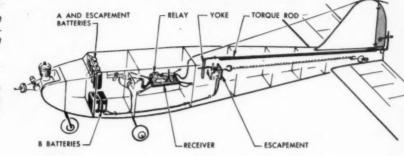
may be used. KEYING

SINGLE ESC. Holding transmitter button down provides right or left rudder (positions alternate). To "blip" around a turn, send dit-dah

COMPOUND ESC.

RIGHT = HOLD

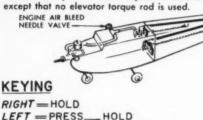
LEFT = PRESS_HOLD



RUDDER, MOTOR, ELEVATOR

Uses one compound escapement and one motor control escapement. Elevator torque rod works off of crank of motor control escapement.

RUDDER, MOTOR System is identical except that no elevator torque rod is used.



RIGHT - HOLD LEFT = PRESS___HOLD

UP OR DOWN ELEVATOR = PRESS_ _PRESS_ HOLD

CHANGE ENGINE SPEED = PRESS__PRESS_HOLDING MOMENTARILY) Engine speed changes after elevator is used. Down elevator always comes next when engine

Using three escapements allows flexible location. Hook up single escapements in series with compound escapement breaker points.

> DIAMOND YOKE (JULY, '55 M.A.N.)

ENGINE AIR BLEED

is running slow. "Blip" by elevator positions to get desired engine speed. RUDDER AND UP-KICKER ELEVATOR Uses one compound escapement. Elevator return spring required.

KEYING

AY

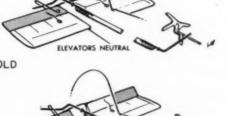
RIGHT - HOLD

LEFT = PRESS__ HOLD

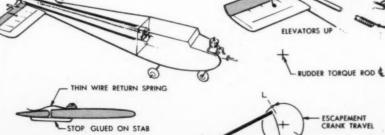
SECTION THROUGH STAR

UP ELEVATOR = PRESS___ PRESS___ HOLD

ELEVATOR TORQUE BOD 4



ELEVATOR DRIVE ARM (PUSHED DOWN AFTER LEFT RUDDER)

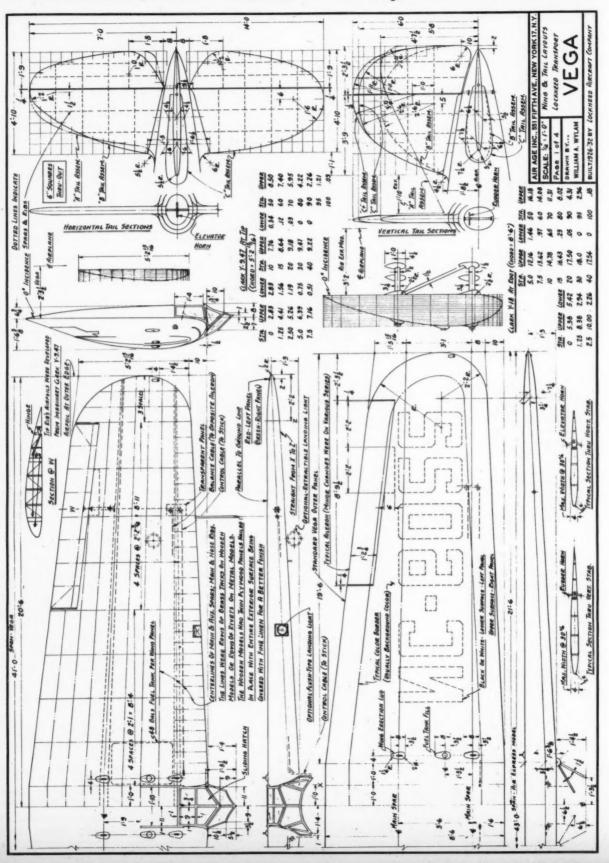


ESCAPEMENT CRANK TRAVEL

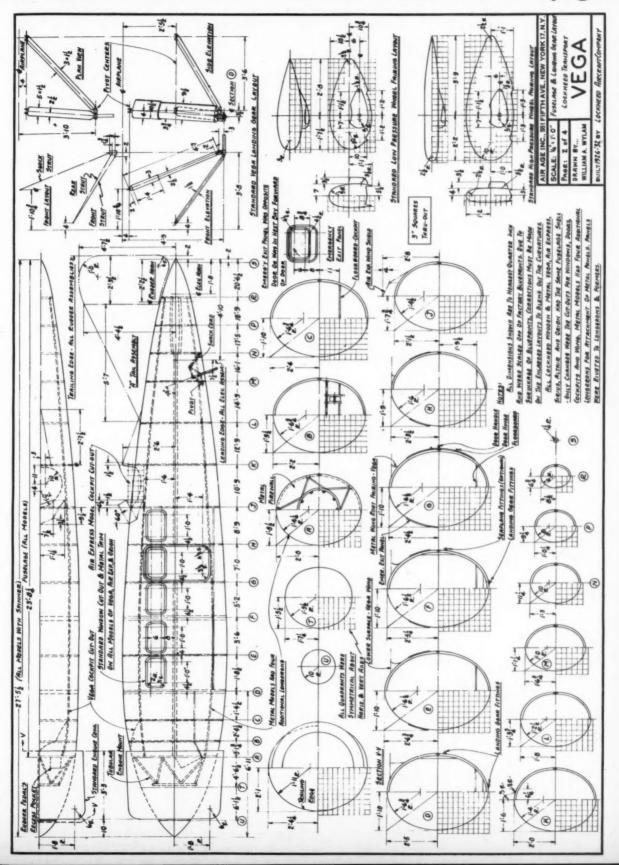
PRESSURE TANK In all R/C stunting, a pressurized fuel system is desirable to prevent engine stopping during consecutive loops, etc.

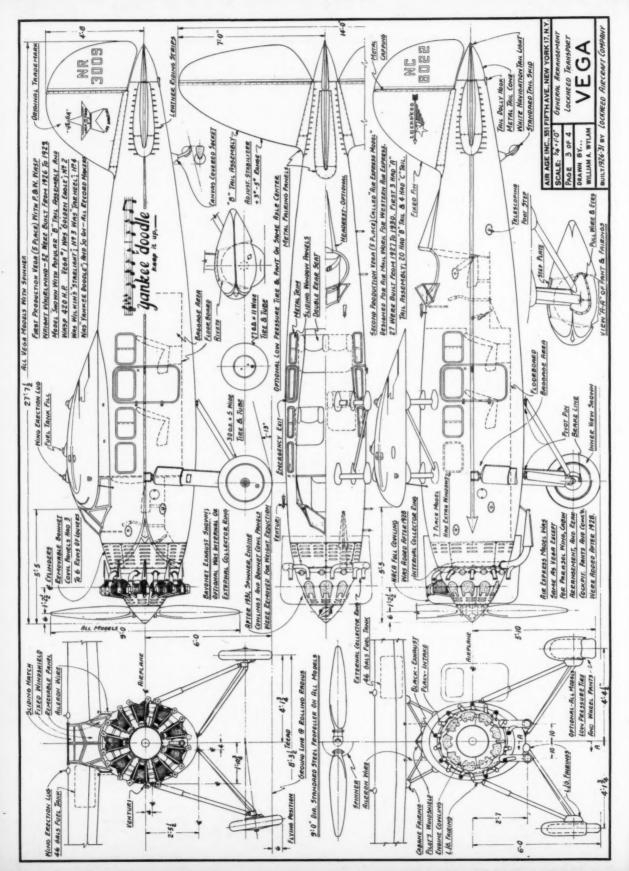
COMPILED BY HOWARD BONNER AND FRANK DAZEY

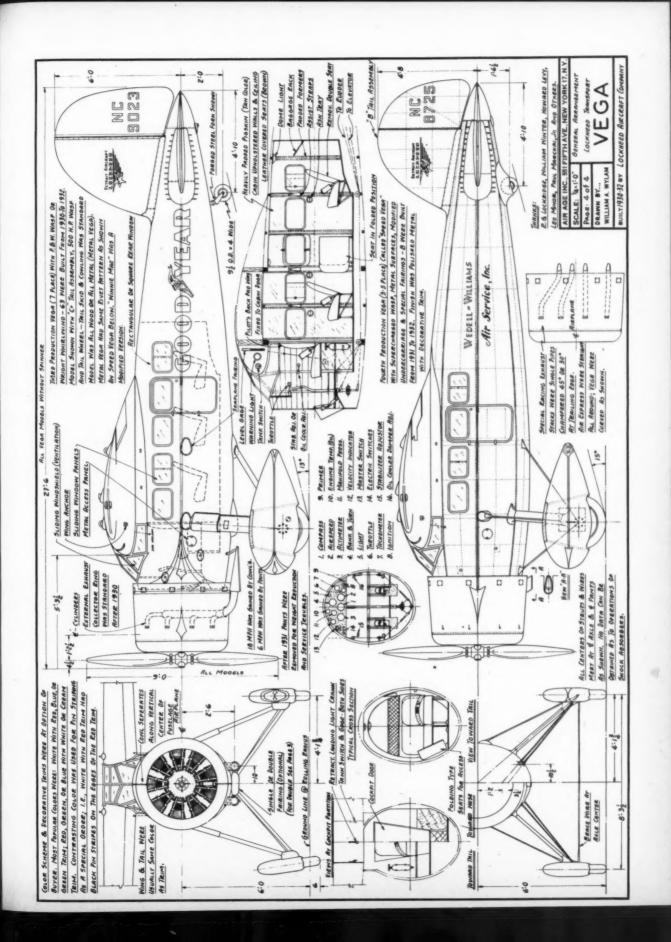
WYLAM LOCKHEED VEGAS --- Complete in this Issue



Historical favorite in 4 Plans...Continued next 2 pages









MODE

Hot Fue Proof

EXTRA FAST DRYING

FORMULA

FORMULA A

FORMULA A . . . extra-fast-drying for quick, easy construction of lightweight models and for on-the-spot repairs. Guaranteed Hot Fuel Proof.





MODEL

TESTOR CHEMICAL COM

FORMULA B

FORMULA B... fast-drying; the strongest for balsa or hardwood ... for metal to metal ... for metal to wood ... for all general work.





MODEL

Strong

FAST DRYING FORMULA

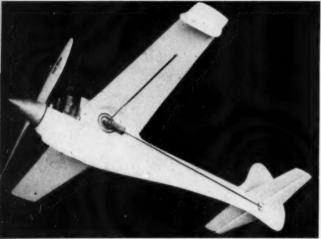
CEMENT

Y . ROCKFORD, ILLINOIS

...........

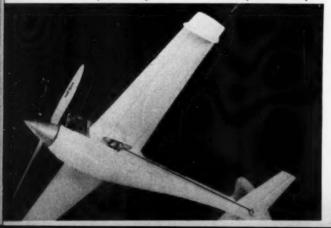


Affable Leo with Quickie Trainer, left, a Quick 60 and a jet job Standard prop, stock Fox (or Torp, Mac, etc.), profile fuselage



Typical Mono-Line set-up (sport, not the custom made racing cam) as mounted against the profile fuselage with an external pushrod.

Below—Identical airplane but with standard U-control arrangement of bellcrank and pushrod. Beginners should note safety sketches on plan.

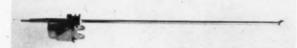




So You Want to Fly Speed?

By LEO R. HOLLIDAY

First, practical speed trainer is easily built and flown. Breaks 100 mph with stock engines, props and fuels. Pen bladder tank.



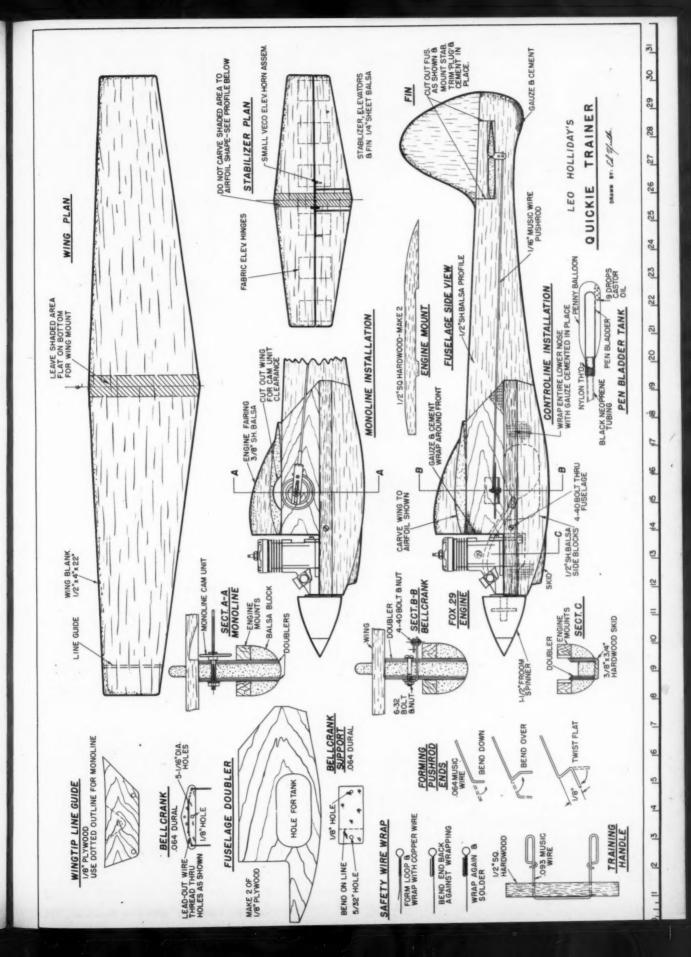
Speed Master Mono-Line control unit used by Clem, Kirn, Beasley, Holliday. A system made for all classes: that is, A, B and C or jets.

▶ The Quickie Trainer was designed with several objectives in mind. The first and foremost was to design a ship that is capable of bettering 100 mph, yet school the average modeler in some of the functional operations of a speed ship; also, to allow him to get acquainted with the many factors of safety that are necessary when building speed.

The one thing that can kill speed, in the eyes of the public and the sponsors of model contests, is to see an accident occur around the speed circle that could have been prevented with just a few simple safety precautions. A modeler should always check his own lines before each flight and not even attempt to fly if there is some question in his own mind that his ship may break loose.

A new set of lines costs around 75c. Stop and think for a moment how much money you have invested in your engine alone. Why take a chance on an old set of lines that you need left year?

One feature that was included in this airplane that may stymie the beginner for a moment is the pen bladder tank. This type of tank is fast becoming the standard in speed and it seems only right that it should be in a modeler's first serious attempt at training for speed. I actually used the standard Fox needle valve with the pen bladder tank and had wonderful results. You simply (Continued on page 34)



WORLD ENGINES FREE AIR MAIL



NEW! OS-MAX-I 35

Reasons why the new OS Max1-35 (MAXIE) cannot be compared with any 35, foreign or
domestic. The MAX-1-35 by
OS is a brand new 1955 model
—new from the ground up—not
to be confused with the early
OS 29 or 36.

- The OS MAX-1-35 has terrific puring—and features two additional piston by-pass ports in addition to the lower sleeve entry — a feature usually found only in the \$25.00 to \$35.00 racing angies.
- The OS MAX-1-25 comes with nice rubber dust covers for BOTH exhaust and venturi. An exclusive feature to date.
- 3. The flex-needle is another custom feature.
- 4. The "Maxie" has its venturi polished and come with two inserts giving three combinations.
- 5. Sandblasted crankcase and many exterior finishes make MAX the "Engine of Distinction".
- Highest bore stroke ratio—our tests indicate that the OS MAX-1-35 has no equal for all out orge power.
- Each OS MAX-1-35 is factory broken in to the point that it can be installed directly into the plane.
- 8. ALL OS MAX-1-35 parts adequately stocked, all service, by WORLD ENGINES right here in the U.S.A.
- 9. Unbelievable as it seems, this engine cests only \$11.95 at your dealers, or direct from us.

ORDER NOW - FREE AIR MAIL

Yes, Free AIR MAIL, anywhere on the planer. U.S.A.— COD orders accepted if you enclose at least \$1.00. Send check or money order. 24 hr. service.

OS Max 1-35 Stunt	\$11.95
OS Max 1-29 Team Race	12.95
OS Max 1-15 International	9.95
OS Max 1-15 2-speed	11.95
DIESEL ENGINES	
Webra Mach 1 .15 Ball Brg	13.95
Webra Winner .15 Seom-9.95 Flange	9.95
Webra Winner .15 2-speed, Bm. & fl	12.50
Webra Record .09 Bm. & fl	8.85
Webra Piccolo .049 Incl. Tank & Prop	7.85
David-Andersen .15	15.95
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FOREIGN NOTES

A monthly world-wide round-up of technical developments, designs, significant industrial products.

P. G. F. CHINN

by P. G. F. CHINN

France: World Speed Championships

Eleven contries competed in the FAI
World Speed Championships, held in Paris
on July 2 and 3. The contest had originally
been scheduled for June 29 and 30, was
later moved to another location for July
2 and 3, then back to Paris—a somewhat
confusing state of affairs for prospective
contestants. The final set-up did not, it is
felt, do justice to the importance of the
event. Complaints were heard about the
site chosen (a cycle track with about ½ in.
of dust, grit and small stones) and insufficient time was allowed in some cases
for models to be processed and started. It
was estimated that two out of every three
take-offs resulted in broken props caused
by poor ground conditions. In some instances, officials were slow to enforce rules.
French Aero Club, however, is thanked
for providing good food and accommodations.



Japanese OS receiver. In neat plastic case similar British ECC. Uses single hard tube.

Competing nations were U.S.A., Great Britain, Italy, France, Germany, Holland, Belgium, Denmark, Sweden, Czechoslovakia. and Yugoslavia. Results were a surprise to those expecting an American or British win. Engine displacement was of course the International 2.5 cc (.15 cu. in.) Class, flown on the revised line length of 52.214 ft., which reduced speeds somewhat. Top time recorded, by Josef Sladky of Brno, Czechoslovakia, of 179 km.-hr. (111 mph), was outstandingly good, as were those of the entire Italian team and of Sladky's compatriot, Zatoul. Czechoslovakia also took fifth place with 171 km.-hr.

In second place was world record holder Amato Prati of Bologna, achieving 176 km.-hr., followed by Franco Monti of Bologna and Clemente Cappi of Milan, each with 175 km.-hr., and Zatoul of Czechoslovakia and Giuseppe Gottarelli, again of Bologna, each with 171 km.-hr. Seventh place went to Olle Ericsson of Sweden with 169 km.-hr. and the well known Yugoslav expert, Emil Fresl, was in eighth place with 163 km.-hr. On the team basis, Italy was first, Czechoslovakia second, Great Britain third, Yugoslavia fourth, Germany fifth and France sixth.

Best British performance was by Dick



British Tri-ang X-mitter for continuous or a pulsed signal. Will try for American market.

Edmonds in ninth place with 162 km.-hr. (101 mph), followed by Pete Wright with 160 km.-hr. U.S.A.'s Bob Lutker (last year's winner) could not get going well, but was impressive in the stunt event in supporting programs.

but was impressive in the stunt event in supporting programs.

To us, Sladky's win was obviously no fluke, as reports had reached us, during preceding weeks, from Czechoslovakia, of his reaching speeds of over 106 mph with a new Sladky-Husicka 2.46 cc glow plug motor specially designed for the event. According to the Italian team, however, the Czechoslovakian engine was no better than their Super-Tigre G.20's. Sladky enjoyed two advantages, neither of which should detract from his performance, however, for he is a first class competition flier and really knows the speed game.

Firstly, Sladkv used a normal metal tank and had no difficulty in getting even carburetion flight after flight. The Italians, on the other hand, used balloon tanks which needed revised settings for each new flight. Secondly, the changing weather conditions over the two days were considered as having favored Sladky and some others. The Sunday morning was cooler than the previous day, overcast and with



Japanese Max-1 .29 and .35 engines have skirt bypass ports in lapped pistons. Works well.



Czech modeler Miroslav Rohlena with his 1955 A.2. Czechoslovakia is world speed champion.

a rainstorm coming up. On a tachometer check, Prati's G.20 was then turning 1,000 rpm higher than on the previous day, but his official flight was not made until the afternoon when atmospheric conditions had changed again, whereas Sladky's flight (as with Monti and Cappi) was made during the morning when speeds were highest.

the morning when speeds were highest.

All the Italian team members used the lapped piston version of the Super-Tigre G.20S glow plug motor. It will be observed that three of the four team members were from Bologna, where the Super-Tigre is made, but the motors were not in any way "specials." Some extra care was taken during breaking-in; otherwise, they were stock production models. The Sladky-Husicka motor is virtually a custom built job (produced by Josef Sladky and Zdenek Husicka), a free lance design, but showing signs of Super-Tigre and Dooling influence.

New Zealand: Bethwaite on RC Records New Zealand's Frank Bethwaite now enjoys the distinction of holding (subject to ratification by FAI) both the world RC power model duration record and the world RC glider duration record, with lights of over three hours. The former record he achieved on January 30 with a time of 3 hr. 2 min. The latter record Bethwaite set up on April 17 and his time of 3 hr. 28 min. beat his own previous world record mark by nearly 1½ hours. Rather remarkable is the fact that, on the previous day, he put up a time of 3 hr. 24 min. before a control mistake took the model out of the lift area and ended the

There is no doubt that Bethwaite has accumulated more RC duration flying hours than anyone else and his ideas on the subject must necessarily command respect. On this account we would hesitate to disagree with any of his opinions but in any case, we entirely agree with his summing up of the difficulties attending RC duration record attempts in which he comments: ". By the time one has spotted a suitable day coming, on a day when one is free to devote the whole of it to an all-out endeavor, and has persuaded adequate timers to devote their whole day, too, to watching the attempt and has then transported the entire expendition to a supposedly suitable location, there is nothing in the model side to compare with the practical difficulties of complying with the entirely necessary rules."

"The biggest of its kind in the world" is the claim of the organizers, the St. Albans Model Aero Club, for their All-Britain Rally. This one-day meet is, in fact, the largest annual model aircraft event to take place anywhere outside the U.S.A. and is believed to be the largest model meet in the world to survive without ouside help. (Continued on page 34)



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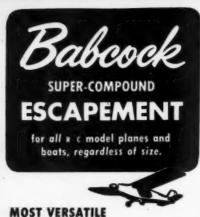
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Foreign Notes

(Continued from page 33)

However, some commercial sponsorship is introduced into the 1955 meet, to be held September 25 at the Handley-Page airfield, some 20 miles outside London. London newspaper Daily Mirror will sponsor a series of junior events for under-sixteens, including free flight gas, rubber, glider and Jetex. British Overseas Airways Corp. will take a leaf out of the PAA book and present Speedbird trophies for team racing, plus invitations to all first place winners (about 26) to a behind-the-scenes tour of London Airport. Finally, the Imperial Chemical Industries Trophy for Jetex dura-tion will now be incorporated into the Rally instead of being run as a separate meet. De Havilland test pilots John Cunningham and Peter Bugge will judge the concours d'élégance event and pioneer aircraft manufacturer Sir Frederick Hand-

dey-Page will present the prizes at the end of the day's flying.

Germany: Expanding Model Industry

Big strides are still being made by West

German model firms. Makers of the Webra engines report record trading. Webra engines are now put out in plastic boxes gines are now put out in plastic boxes with transparent lids and purchasers also get an enameled Webra lapel badge with each motor. Johnannes Graupner firm, which makes nearly everything involved in models: engines, RC gear, kits, plans, fuels, props, materials, has one of the biggest and finest model catalogues we have ever seen Latest plans from this firm have ever seen. Latest plans from this firm are superbly turned out, printed in English and German and include an excellent illustrated instruction booklet.

So You Want to Fly Speed?

(Continued from page 30)

close off the needle valve and inject about 3 cc, or 1 oz., of fuel into the tank, using any standard ear syringe, then hook on the pen bladder to the needle valve. Open the needle valve slightly until fuel be-gins to flow into the venturi and then begin to flip the prop by hand.

The engine will begin to pop after the valve has been opened just a little. Keep opening the valve until the engine begins to run just a little and quits for lack of fuel. Then open it just a bit more and the engine should start and continue to run. If you wish to replace the spraybar type needle valve with a Dooling or Mc-Coy type, just tap the needle valve hole with a 10-32 tap. This tank set-up has been used by several of the boys for combat and they have found that they get a

very fast and consistent run.

As you will note, the plans illustrate both U-control and Mono-Line type control installations. The vast majority of the modelers now fly ukie of the Jim Walker type and it may be well that in your first venture in speed, you continue to fly U-control. Many good articles have been published as to installations of this type of control. However, at this point, I think we should note the manner in which the leadout cables are attached to the bellcrank. It is not as important in the speed trainer as it will be in regular speed ships in the future. The cable is laced through the bellcrank and then wrapped at one point and soldered. This prevents possible slippage and, in the close quarters of a regular speed ship, the elimination of the wrapping and solder joints at the bellcrank will prevent many headaches in

With the recent outstanding successes

of Mono-Line in speed, and since this au-thor is completely sold on the possibilities of this type of control, it seemed only just to design this ship with an eye to eventual single-line control. Many exper-ienced speed fliers will no doubt build this trainer solely to make the transition to Mono-Line.

The trainer was also designed to give maximum stability and ease of construction. I think you will agree, after glancing over the plans, that this is one of the easiest speed trainers to build. In fact, with only a couple of nights' work, the ship can be ready for the air, living up to its name

of Quickie Trainer.

The construction of this airplane is quite simple as it is patterned after the general run of profiles. Several points should be mentioned, however. In determining the exact size of the pen bladder compartment, you should make up a pen bladder tank and fill it with 1 oz. of fuel, then outline it in the position illustrated in the plans. All pen bladders do not blow up in the same shape.

Aspiring Fiberglas experts can use this Aspiring Fiberglas experts can use this ship as an excellent experimental lab for covering parts, especially those parts for which gauze covering is indicated. Plasticate type glue was used on all glue joints requiring strength. This glue takes a little longer to set up; however, it is very nearly indestructible and is fuel resistant. The ship can be finished in one of many possible ways. One by using nitrate done and sible ways. One, by using nitrate dope and any type of good fuelproofer or by using a fuelproof dope directly. For you future inited burgers, you may want to test "nitro burners," you may want to test your skill with the synthetic enamels:

Duco or Dulux automotive paints.
A front rotary type Fox .29 was used in the prototype. Should a young modeler de(Continued on page 36)

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cide to build this as his first speed projcet, he could quite possibly fly it in all classes as the mounting screw holes on the Fox .19, .24, .29 and .35 are all identical. However, any of the front rotate profites contains a series of the contains and tary engines on the market today will make excellent powerplants for this model. Very little alteration is necessary for rear rotary engines. However, this will possibly be the first venture for many young speedsters and the trainer will undoubtedly be more successful when the modeler uses engines with which he is more fa-

As we said, construction is quite simple. However, some potential danger spots should be highlighted. Since most of the work in building this ship is centered work in building this ship is centered around the fuselage, it is quite logical to begin construction here. First, draw off the outline of the profile on a % in. piece of balsa. Do not cut out the profile until reference lines have been drawn for both the elevator and the motor mounts, keeping both at zero degree incidence. Next, secure your pen bladder tank and fill it with 1 oz. of fuel-this is sufficient for speed training flights-and outline tank in position as indicated. Then cut out the outline of the tank out of the profile. Cut the motor mounts out of stock hardwood, * x% in. Glue the motor mounts to the fuselage along the line indicated. After the mounts have dried, drill a hole and put a 6 x 32 bolt through both motor mounts. This strengthens the mounts considerably. Mount the engine with the spinner attached.

Next, carve the fairing blocks for the engine and the pen bladder tank. Be sure to fuelproof the inside of the tank compartment before installing the blocks. I used Aero Gloss fuelproof cement for this as it is very fast-drying and does an excellent job. Next, glue the % in. plywood stiffeners that are sandwiched between the wing and the motor mounts on each side of the profile. Now, drill the mount-ing holes for the type of control you wish to use. The Mono-Line holes should be countersunk one ply on each side in order to allow the screw to extend far enough through the profile to be able to apply the nut to the opposite side. The fueslage should now be carved to shape and

The flying surfaces should now be cut out and carved as shown. The rudder and the elevator take simple streamlined sec-tions. The wing should be carved to the airfoil indicated. Next, cement in the wing guide and gouge out the wing for the Mono-Line unit, if this type of control is to be used. Then glue the wing into place. The elevator should be hinged and cemented into place. Next, cement on the rudder. The final sanding should be made and then cover the sections indicated with gauze and rub cement into the gauze surfaces for strength. Next, paint the model your favorite color, using either a nitrated dope and fuelproofing over the dope or use a fuelproof paint, such as Aero Gloss or Dulux. The mounting bracket for the bellcrank can now be made and bolted on. Install the controls and this ship is ready to fly. guide and gouge out the wing for the ready to fly.

First flight should be made with stunt props and stunt fuels and should produce speeds of about 80 mph on a Fox .19 or .29. Hotter fuels may be used and smaller diameter and greater pitch props to increase the speed. A 9 x 7 Presswood Tornado with Supersonic 1,000 fuel should give speeds approaching 100 mph. After that, you're on your own, as undoubtedly the desire for greater speeds will encourage the modeler to experiment

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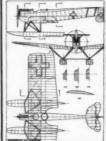


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MAN at Work

(Continued from page 6)

sales in plain corrugated shipping cartons.

New DMECO Aeronca type RC job flew fine right off the bat. Have it powered by Moen's BWM .15 Diesel which performs splendidly. It is a short stroke high speed Diesel so we let it rev up by using a 9 in. prop, but get speed aplenty from a 5 in. pitch. Top Flite prop has enough wood in it to help the Diesel put out smooth revving power. Polk's had some Diesel fuel brewed by Ulman (Sky Ranger) especially for Webras which Polk's import (also World Engines). The BWM starts fine, revs like mad on this fuel.

starts fine, revs like mad on this fuel.

On the Babcock experiments, on our third ship now. DeBolt is right about multi. It is okay to build rudder jobs so they cannot break, heavy and strong. In multi you've got to refine construction, taking off pounds, if you want the maneuvers the equipment can give you.

vers the equipment can give you.

Bench tests with the Fox .35 and the Bramco throttle indicate that all these double needle valve and complicated plumbing deals are a thing of the past. The throttle works like the wonderful Mills throttle: varies fuel and air both. With two needle valves we'd have to have two Walker tanks to allow rich running, otherwise fuel runs short. The Carrier and other two-speed ukie fans should try the Bramco throttle. It's a dilly—we'll back this up!

▶ Night flying sessions have proved out for the Owensboro Model Airplane Club, Owensboro, Ky. Secretary Harvey D. Denton, 1108 W. 12th St., invites other clubs to join in the fun. They use six 6-in. floodlight bulbs in a circle 6 ft. in diameter, with the flier in the middle. The floods are elevated 2 ft. on pipe and set at a 30° angle facing outward. The ships show up clearly anywhere, even at the top of the circle. A hooded pit light, on a 5 ft. pipe, is turned off once the plane is airborne. The bugs are not a bother and the whole system costs only \$25.

top of the circle. A hooded pit light, on a 5 ft. pipe, is turned off once the plane is airborne. The bugs are not a bother and the whole system costs only \$25.

Did you know that the .35 rule doesn't fit many of the stunt engines? Reader Dick Brass, Chanute Air Force Base, says a Fox, for example, is .352. He thinks the rule should be changed pronto to .40. The Jap Max-1 is .355, he claims. Asked about this, Duke Fox stated, "The desire of most model builders is to have all motors of about .35 eligible and I feel that the AMA rules committee should take this into consideration."

this into consideration."

Carl Wheeley at the AMA confirms the problem.

▶ You may not have to love model airplanes to be a successful builder, but it sure helps. Consider Harry Hillman, released from the Navy. His problem? How to get a 9 ft. T-Craft from Hawaii to the States. Harry found that the Mars unit in Honolulu were quite interested in the big model and willingly flew it to San Francisco, so that aviation progress could go on uninterrupted. Then Harry's model building resourcefulness came to the rescue. He took a bedroom on the train and the T-Craft snored in the upper bunk all the way to Ann Arbor, 'Mich. END



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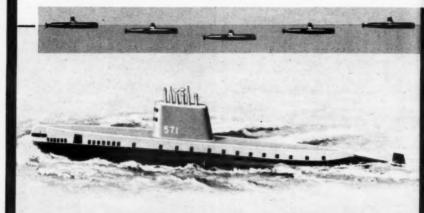
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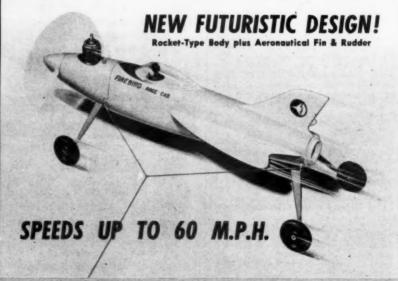
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Flash News

(Continued from page 7) plane, the Mooney M-20, has manually operated retractable tricycle gear. Will be

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Forty-seven feet of excitement and power! Now that's a good way to tell about the F-100C Super Sabre a-comin'. It will have in-flight refueling system, extra fuel drop tanks, electronic methods of putting bombs "dead on target." And, just to show the big manufactur-

ers always have something new, there's Lockheed with its "Jack of all trades" Hercules. The C-130, 54-ton freighter, has a dramatically short take-off and land-ing run, can load or unload, in seconds, 92 troops, or the biggest howitzer of 'em all, the 155 mm, a Nike or Matador missile, a 5,000 gal. tanker truck and tractor.

Don't rule out sailplanes. That designed by Vic Saudek in California will be towed to 12,000 ft. to catch jet streams. It has a wingspan larger than that of a DC-7 will have a small pressurized cabin, might soar to 90,000 ft.

The Equalizer

(Continued from page 17) experiments is was found that a model of this type will perform well through a wide range of angular settings in the stabilizer, considering that the wing is set at a zero angle of incidence. Actual tests showed that a range from zero to -4° could be used without ill effect. The difference is that at the model is rather sluggish and flies at a normal speed.

the model becomes exceedingly fast, yet it is very responsive and probably has the flying characteristics that we like. Obviously, what we want are the good characteristics without the high flying speed and fortunately this follows from using the second method, which means a lower wing loading. The flying speed of a model is governed

by the total lift of the wing plus the rate of climb desired. In other words, if we increase the lift of the wing, we can reduce the flying speed and still maintain the same rate of climb. With a model of a given weight, added lift results either from increasing the wing area or reducing the wing loading. Either approach will result in the lower flying speed that we wish for this type of model. Like most things these days it is a lot easier to say than to do, but an analysis showed two possible ways of accomplishing it. First, no matter what the model might be,

the equipment weight is fixed; that is, the

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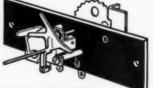
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EW! Write for new free data on single-channel RME systems.

radio gear, etc. are going to weigh only a specific amount. This leaves the model alone with which to solve the problem. The simple answer would be just to add more wing area. However, with our "minimum" type RC designs, this just cannot be done without upsetting the careful balance which we now have. Thus, if we are to increase wing area, we must also increase the size of the rest of the model. Unfortunately, this can result in a "merry-go-round," for as we increase the model's size, we must add more weight for the structure and usually a heavier, more powerful engine. The result is that we must not only add enough area to reduce the loading at the model's original weight, but some more too for the increase in the larger model's weight. It should not be hard to see that by the time we get through with it all, we may have a model of such size that it may very well be too big to be usable by most of us.

16

n

D.

The Equalizer is a successful attempt in the opposite direction. For this one we used the basic equipment weight needed and added to it the minimum amount of model necessary to get the desired wing loading. Actually, it was made possible as a result of experimenting with lightweight structural design. These experiments had been carried out along the lines of the inertia-mass principle. Formerly in RC design we had built the whole model rugged to withstand abnormal abuse. The experiments showed that if we removed the mass weight and concentrated our strength at points of stress we could reduce the over-all weight of the model without reducing its strength. These experiments proved very successful and of course are the means which made this particular model possible.

The wing loading aimed for was 16 oz. per sq. ft., which seemed a reasonable limit. We had a total equipment weight of 32 oz., Schmidt five-channel receiver with servos for rudder, elevator and engine. All this was mounted in the removable RC unit. To this we felt that an equal amount of weight would be necessary for the model, making a total of 4 lb. At 4 lb. we would need 600 sq. in. of area to get our 16 oz. loading, which seemed within reason under the circumstances. In practice the model worked out well, weighing a total of 62 oz. and in all its many flights it proved to be close to the ultimate.

This obviously is a model for the advanced RC flier, so we will not give detailed building instructions, but rather tips and hints that could not be included otherwise. First, the choice of equipment. Because of the inverted flying requirement, the writer used a five-channel type which allowed sep arated selective controls as well as trimmable elevator. Another choice might be one of the single-channel types which allows the use of elevators or, if you have one, a new two-channel lightweight rig can be used. The simpler equipment would have the advantage of lowering the wing loading and adding to the general performance.

Choice of power plant is the second consideration. A .15 engine is marginal in power with this model at a 4 lb. weight. Hence, if it weighs that much, use one of the lightweight .19 engines, like the Fox, and reduce the power by plugging it. If you can build lightly, stick with the .15 for its lighter weight and avoid the necessity of altering the engine.

Your engine will need a fuel tank of the "Positive Flow" variety. There is one available that uses an internal swivel and also one of the pressure type. Either will do the job very well and accomplish the same results. We strongly advise the use of the remov-able RC unit. When you get as much equipment jammed into such a small area as with this model, the removable unit can be a great help with service as it brings everything right out into the open. It can facilitate repairs, too.

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Choice of wood becomes extremely important with this sort of structure for when you reduce the quantity and number of parts, those which you do use must be able to do their specified job. Use a good medium-textured wood throughout, avoid poor quality material and use hard types only in the nose of the fuselage for reinforcements. It is most important to use medium-textured wood toward the tail and plenty of sandpaper there also. Using too heavy wood and sanding in-sufficiently at the tail are the main causes of

Flying the Equalizer is not much different from normal types. Actually, once you are airborne, you can hardly tell the difference in borne, you can narray ten the universelve in upright flight. You should, however, use greater launching speed than normally as this model does fly faster. If you have trimmable elevators, trim in a bit of "up" for the mable elevators, trim in a bit of 'up' for the launch. It will help. In normal power-on flying there is nothing you cannot do; as a matter of fact, you will soon notice that the model possesses an ability to recover much more smoothly from abnormal positions. However, with power off, do not stall the model excessively when close to the ground, for it will tailspin when forced into it and you must dive to get out of a spin. Lack of altitude could be disastrous. In all your flying remember that the only way to get out of a spin is with down-elevator-nothing else will have the slightest effect. Spins are new and loads of fun; just use plenty of altitude when doing them. Outside loops are the easiest of all. Just apply full down-elevator and wait -they come naturally.

Inverted flight can be entered in two ways: over the top or down and under. Going over is probably the safest as you are gaining altitude. However, the easier to trim out from is going down and under as in this manner you maintain flying speed automatically. This particular model has flown as far as a half mile before recovery from inverted flight and

models

has at times completed 180° turns without falling out. However, the secret is to work on the rudder trim until you do not have to do any correcting while inverted. Also try to keep the model flying levelly. A high angle of attack will increase the tendency to fall out.

If you have trimmable elevators, landings can be something to behold. Normally the model lands as most others do but you can add considerable amounts of "up trim" without fear of stalling at this point. This results in really flared out three-pointers that are so nice to watch.

Much good flying is in store without elevators or even when using the self-neutralizdegree of this flying will depend upon just how carefully you trim out the model—perhaps by using more or less trim between flights so as to be able to get the particular performance desired for each flight.

The Equalizer has been a very satisfying model to me and one which possesses a great potential, far more than I have ever had the time to develop. Now you take it from here!

Contest Calendar

OCTOBER 9-Fort Worth, Tex.: Cowtown Sahibs' Record Trials for all outdoor events. Ralph Tenny, C.D., 608 W. Prairie,

Arlington, Tex.

Arlington, Tex.
9-Arcadia, Calif.: Class AA Team Racing
Contest. Les McBrayer, C.D., 1238%
So. 2nd St., Alhambra, Calif.
9-Boston, Mass.: Class AA Boston Model
Rally for FFG, OR, TLG, OHLG. Lee
Renaud, C.D., 330 Hyde Park Ave., Boston, Mass.

9-Bridgeton, Mass.
9-Bridgeton, N. J.: Class AA Bridgeton
Model Airplane Club Meet for CL,
CLS, CLC, CLFS. Charles H. Errickson, C.D., 31 Walnut St., Bridgeton,
N. J. (Continued on page 44)



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The Amazoom

(Continued from page 12)

tabs. The answer seemed to be elimination of tip rudders and offsetting the fin at the angle at which the propeller wash flows over the tail. Result was a trim set-up that was neutral on the way up and right as soon as

the engine stopped.

Next came VTO as a logical solution to the usually inadequate take-off site, as it usually allows a little more altitude, when used with a suitable prop. Blade area should be on the generous side to give a quick,

"solid" vertical take-off.

A surplus of Amazons allowed us to satisfy our curiosity about minimum dihedral, stab and fin areas. Absolute minimum stab area was 15 per cent and anything less than 25 per cent proved rather sensitive to adjustment. Reductions to 25 per cent improved glide, particularly in respect to recovery from turbulence displacement. Finally, a 30 per cent stab was fixed as a happy medium of adjustment for adjustment ease and performance. Dihedral angles of 6° inboard and 15° outboard with the outer break at 60 per cent out from the root gave all the stability necessary while maintaining a really good glide. Less than this amount didn't roll well enough and more than this spoiled the glide somewhat.



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Fully Re-Designed "CUSTOM RECEIVER" weight under 3 ounces including 10,000 ohm relay (relay included) plus Silver Ceramic Trimmer, midget resistors & condemons, Nylon Coat Coil wire etc. Uses one X F of 1 Tube which IDLES while relay not energized saving Tubes life, Batteries etc. Frame Pres Band with pre-drilled which IDLES while relay not energized saving Tubes life, Batteries etc. Teams Free Band with pre-drilled base etc. Transmitter Batteries etc. Frame Pres Band with pre-drilled base etc. Transmitter Band of the Batteries and instructions included. "CUSTOM ACTUATOR!" of new magnetic principal operates both rudder and elevators or rudder alone off battery supply, no rubber used for Boats, Aircraft, or Cars of small ½ A size up to large 8 ft. models. You do not have to be a Radio Expert to assemble the 5 units, all parts are tagged and marked to correspond to drawings.

"CUSTOM MIDGET" RECEIVER TRANSMITTER and ACTUATOR \$9.98

Also Available "STANDARD MIDGET I" Radio kit, this group of 3 units, same design as above, same Relay, Same type Transmitter and Actuator, The difference from above is the Receiver weight which is greater (slightly over 4 ounces) Heavier components used.

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'SUPPLY SOURCE DIRECTORY" Tell normal prices. \$7.00 MERCHANDISE CO "SPECIAL 10 FOOT TRANSMITTER A	where to obtain Rel UPON FREE with Di ERIAL"\$1.00	nys, Tubes, Crystals, a irectory. SPECIAL 10,000 (ill types	equipment low as 1/20 price \$1.00 MA RELAY \$2.98	th 00
3-A-4 tube 1.00	bove 5.25 Ba		2.98 🗆	Black Crackel Finish Transmitter Cases 4" x 5" x 3" \$2.98 6" x 5" x 4" 3.25	8
Micro Switch98	Solder,	sctric Motor 6 volt for Boats 2 to 4 Ft. \$8.50 value	3.88 🗆	6" x 6" x 6" 3.50 10" x 8" x 7" 3.98 Neon Bulbe 15 for 1.00	$\bar{\Box}$

RADIOMODELS, BOX 36, DEPT. M BALTIMORE 6, MARYLAND

Bill Kaupp, our club president and contest director, tried turbulators on his 310 in. Amazon and, while glide went unchanged, altitude loss in stalls was halved. This prompted a change to a turbulent-flow section of the sharp-nosed variety. To keep a fairly high mean camber in a thin, flat-bottomed section, the entry point is as low as possible, giving a mean camber of five per cent in a ten per cent thickness section. This wing had better penetration, far better stall recovery and a better glide.

One Amazon was tried with various combinations of downthrust and stab thickness, downthrust varying from 0° to 10° and stab thickness from 6 to 12 per cent. Result? Stab thickness variance was found to be much more effective in controlling looping tendency. Stab thickness of eight per cent with downthrust of 0° to 3° seemed to offer the best combination for good control without undue sensitivity. These data in particular are very specific for one design and vary a lot with wing and stab moments.

Then the AMA changed its rule on the use of wheels, allowing the fin to be brought to the bottom of the fuselage and omitting the wheel. Immediate advantages were less complex and more stable VTO platform and a fin that couldn't be knocked out of alinement. Not foreseen but very welcome was a beautiful climb-glide transition resulting from a more upward-inclined rolling axis.

That was about as far as the Amazon could go under the same name, since everything had undergone structural and functional change except the fuselage contours. On the theory that most model turns are "skidding" ones, the next ship had a 5° forward sweep at the LE to give more lift to the inside wing. This method is preferable to wash-in because it doesn't add a turning tendency of its own that has to be compensated for at high speed.

Summing up the flight characteristics of the entire line, the ships have an excellent ability to punch through turbulence with minimum upset; left climb turn and a marked resistance to spiral dives. The Amazoom combines the best features of the ships it succeeds with simple and quick construction.

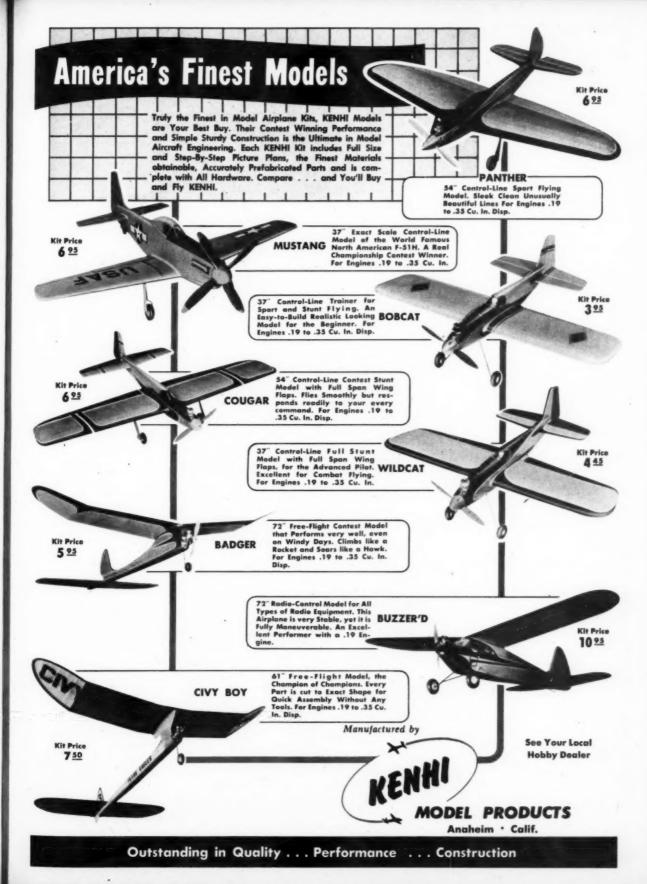
Although construction is straightforward, we've discovered a couple of tricks that will speed things up. In the "crutch sandwich" type of construction, trace off the fuselage plan onto the right side sheeting with carbon paper and build directly on that, adding the left side sheeting before removing it from the board to insure perfect alinement. Build the left wing half directly on the bottom of the right wing (with waxpaper in between, 'natch). This saves the plan and gives perfect similarity of the two wing halves.

The fuel tank is pretty clear on the plan. But note that for operation on very high nitro content fuels, such as Ohlsson 2000, it is advisable either to drain the tank between flights or to use metal rather than plastic for construction. Use ethylene dichloride as a cement for the lucite glow fuel tank.

Of course, silk covering is preferable to paper for its greater strength. If you're using a Diesel, here's a good dope mix by courtesy of Johnny Carroll, secretary of the Irish AMA: one part clear or pigmented nitrate dope, one part banana oil and five to ten drops per ounce of castor oil. It gives a good sheen and doesn't tighten too much. About four to six coats will do the job.

The light weight of the design permits use of heavier engines, such as ED 2.46 and Oliver, as well as ballasting to exact FAI requirements. Add the ballast in holes cut in the nacelle top. This also helps place the

CG at exactly 70 per cent of the wing chord.
To fly, just block up the front of the stab,
adjust glide until it is definitely too steep,
then remove just enough for a flat, straight



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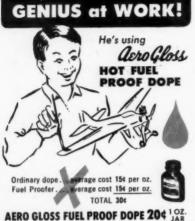
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glide. Take the first few flights at low power, adjusting with rudder tab or stabilizer tilt for a wide left climb and wide left or right glide turn, choosing the one that comes most easily to your ship. A little right thrust may help in some cases. Any looping tendency may be controlled by shifting the wing forward and lowering the stab TE to retrim the

Under full power, it should do one to two turns in a 15-second run. Contrary to the usual preference for a tight glide turn, I prefer a wide one because it averages the effects of thermals and downdrafts rather than leaving the ship dependent on the right kind of current. This is no handicap as the ship is easily capable of a maximum flight without thermal aid. VTO launches should normally be made downwind if it is at all windy; otherwise, it's not critical.

You and your Amazoom should get along well. Just take time to think out adjust-ments before you make them—same procedure you'd follow with any "hot" airplane.

Radio Control News

(Continued from page 22)

receiver, while competing in the multichannel event. European and British flying has swung to quite a few multi-chan-nel units and they do quite well. One item which is often overlooked when going over to multi-channel work is the plane itself. As mentioned previously, the fact that you have been flying with rudder-only, successfully, does not mean you may expect the same results when you put a multi-channel unit into it, especially on elevator control.

Anyone who is a member of the AMA

is familiar with the insurance provided. In the days of rubber-powered models

and free flight gas jobs, this was something to be considered. Now with RC flying, the fliers have somewhat ignored this insurance business, believing that RC was the solution to all "irregular and unwas the solution to all irregular and un-controlled" flight patterns. However, the planes in some cases have become bigger and heavier and more costly and there-fore insurance is something that should be given consideration. We aren't out to sell insurance, but Bill Pythruss of Kingston, N.Y. points out that a special policy is issued by Heber Smith Morris, Inc., 113 North St., Alexandria, Va. This will cover personal accident, baggage, models and equipment. This, plus your AMA insurance, should give you full coverage.

CLUB NEWS

Although the KC/RC Association of Kansas City, Mo. held their AAA meet on June 18 and 19, we thought you'd be interested in the results. As a two place home-made soaring glider, towed up from home-made soaring glider, towed up from the flying site at Stanley, Kan., maneu-vered overhead during the contest, Dick Arland picked up first place in rudder-only and Dan Walters took first in the multi-channel event. Out of the 33 of-ficial entrants, Kenny Wright, Kansas City, Mo. took first prize for the worst crack-up. Second place in the multi-channel event went to the grand-daddy of builders, Charles Siegfried of Wichita, Kan. Looks as if the multi-channel event will get Charlie and his "flying lab" back in circulation.

It wen't be until next month that we'll be able to bring you the winners of the New England RC Championships held near Wellesley Hills, Mass. on August 14. How-ever, it might be interesting to know how the contest was run as far as events are concerned. The rudder-only and multi-



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Kit S-6-Span 42" for engines from .19 to 60

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If you liked the Ringmaster, you'll love the Super! It's Matt Kania's best design. The Super Ringmaster has everything that made the Ringmaster world-famous . . . PLUS an amazingly simple, rugged, and realistic fuselage. YOU MUST FLY IT to see the astounding difference!

Super Ringmaster features shaped and notched leading and trailing edges. Die-cut ribs, tail surfaces, plywood parts, fuselage. Balsa covering, Formed wire landing gear. Gas model silkspan. Decal insignia. Hardwood motor mounts. Easy instructions, etc.

Captain Eddie Rickenbacker's

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NIEUPORT '28' RICKENBACKER'S WORLD WAR I NIEUPORT ... AUTHENTIC EVEN DOWN TO THE MACHINE GUNS!

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channel events were combined through lack of "hot shots" in each division. They ran the regular AMA precision and stunt ran the regular AMA precision and stunt pattern, one mile closed course race, spot landing contest, beauty event, novelty event, "best" crack-up award and the John K. Ross perpetual trophy for the New England RC Champion. We can't wait to find out what the novelty event consisted of and how the one mile race came out. Here might be two new events

to put some spice into your flying.
George Davie of Norfolk, England is shown holding his new RC glider. Using a German Taifun-Super .21 Diesel, this 12 ft. job has a 30 oz. fuel tank and employs a geared Aerotrol escapement, giving 4,000 turns on the rubber. Peter Chinn, our English correspondent, reports that this model is for long range flying, so it is not certain that it is strictly an endurance job. Pete also commented on the fact that almost everyone in England uses Diesels for RC work, the only disadvantage being that as a model went into a dive and rpm increased, the engine would cut out. Overrunning the compression (ignition timing) setting is the cause of this and the one solution is to run the Diesel on a small prop, so that the speed of the engine is almost maximum.

This will decrease the percentage of rpm gain from normal speed to dive speed, to a point where critical compression is not confined to such narrow limits. Also, to repeat the message of former columns, there is much interest in the old ignition engines for RC work. For en-durance, there is the problem of an ignition power source, this being solved by the use of an Eveready battery weighing 6 oz. (no other details on the type or size). The main problem at present is to find a set of ignition time points which will hold up for several hours. As we remember it, Ohlsson Motors ran a .23 for about 400 hours, back in the late 'thirties, prior to marketing the engine. The only replacement claim on this endurance run was a change of spark plugs.

The workshop shot of the 10 ft. Tri-Pacer, built by Dewey Golden and Marion Cain of Lafayette, Ind. sure looks big and rugged and has plenty of space for RC gear. Could the trend be back to larger ships? John Campbell of Lafayette has built an 8 ft. Douglas O-46A from plans scaled up from MAN. It uses an ECE transmitter and receiver and excellent results are obtained.

sults are obtained.

Here's a quickie on the First Annual Radio Control Conference held by the Flying Bisons of Buffalo, N.Y. over the Fourth of July week-end. Two rolled and close cut sod runways, 500 ft. long, provided excellent take-off and landing areas for the 40 fliers. WGR-TV covered the event on Sunday, with the feature being a closed course race. A triangular course I mile on a side being the course layout .1 mile on a side being the course layout. Flying it was much easier thar had been anticipated, including some fairly high unofficial speeds. The fliers, in general, were quite well versed in all phases of RC work and equipment, with multi-channel work and equipment, with multi-channel equipment being put to good use in planes such as the 1,300 sq. in. bipe by Ernie Kratzet of Detroit, Hal deBolt's new large symmetrical wing job and Harold Keller's Cub, complete down to the last detail. The multi-channel equipment used favored the five and six reed units by Schmidt and Bramco. This is another informal gathering of interstate fliers who gather for the love of flying rather than gather for the love of flying rather than to shoot for prizes.

The International RC Meeting, held at Mulheim-Essen Aerodrome, Germany, this



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summer, showed multi-channel flying to be on the upsurge. Dr. Gobeaux of Belgium took first in the multi-channel event with a total of 459% points, flying his ED Queen. His receiver consisted of six tubes (five 3V4's and one 1T4) in a tuned circuit selector, possibly on the order of the Babcock unit. Rudder control by an ED Mk3 escapement on one channel and a motorized elevator actuator on the other two channels provided control. Mr. Laiy of Belgium took first in the rudder-only event with 205% points. Nineteen maneuvers had to be made in this contest. Karl H. Stegmaier of Germany used an eightreed receiver and his controls were actuated by minute electro-magnetic pneumatic actuators. These actuators produced a pull of over 2 lb. With the exception of a beautiful scale Cessna by H. Lichius of Wann, Germany, the models were on the "boxey" side and reminiscent of our early RC jobs in the late 'thirties.

New Items

Some time ago we mentioned that Paul Runge of Ace Radio Control, Higginsville, Mo. was about to publish an index of RC articles. This bibliography is now ready, printed on sturdy 5% x 8% in. stock, for loose leaf filing. It contains an index on receivers, transmitters, actuators, boat and plane plans and gadgetry. And for only \$1.50 you get the complete set, thus putting at your fingertips all of the pertinent RC information from 1950 to July, 1955. which has been published in MODEL AIRPLANE NEWS and other magazines.

CG Electronics Corp., 305 Dallas St., N.E., Albuquerque, N.M. has one of the best catalogue sheets we've seen in a long time. It is put out as a three-color, four-page brochure and complete infor-

mation on each unit accompanies the photograph of each item. Straight carrier, tone modulated, single-channel and multi-channel equipment are offered. The items that really struck our eye were the two Reed relays, Model AR-2, the two-channel reed which sells for \$11.95 and the AR-3, or three-channel reed, which sells for \$12.95. Each weighs only .4 oz. Coil resistance is 7,000 ohm DC and the minimum driving voltage required is 2.5 volts rms. Reed frequencies from 250 to 400 cycles. A schematic for a transistorized multi-channel reed receiver is included free with each reed bank, upon request.

From Lafayette Radio, 100 Sixth Ave., New York City, comes the latest in printed wiring "do it yourself" kits. From the simple basic kit, 5001P which sells for \$3.95 through the Servicemen and Technicians' Kit, 5003P at \$9.75, you can go up to the Product Designers' Kit, 5004P for \$25. All kits contain the copper clad laminate material, resist material and etching material and are packed in a plastic box. The size of the kit is determined by how much material is supplied and in the various pieces of hardware, such as special tube sockets, eyelets, drills, etc. Full information on how to adapt your sample work to production techniques is given in the large kit. Printed wiring is here to stay so you may as well become familiar with it and even make

Bramco Products, 1717 S. Main St., Pleasant Ridge, Mich. has a new brochure describing their many fine RC sets and accessories. Besides their excellent servos, powered by Pittman motors, they have what may be the answer to the ideal throttle control. A photo shows this \$5.75 unit, mounted on a Torpedo engine. Al-

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For planes up to 20" wing spor
—with fuel and wick ... \$1.95.
Extra fuel 65c for 6 pellets and
wick .3 24 for 15 pellets and



JETEX #400 "SCORPION"

Thrust is 3 times the total weight. With fuel supply and wick and 4" augmenter tube . . \$8.95. Extre fuel \$1.95 for 10 pollets and wick.

AMERICAN TELASCO, Ltd., 164 Spring Rd., Huntington, N. Y



though we haven't tried this unit ourselves, we've seen the fine workmanship of it and know it to be of the proper de sign. Your editor says it is the best of any he has used, since it allows an engine to idle down as low as 15 per cent of the maximum speed. The Bramco six-channel receiver is being widely accepted, mainly because of its 150 ma filament drain and idling current of .7 ma on the B supply. The design of the reed unit itself leaves it unaffected by temperature or humidity and allows high contact dwell time, assuring more positive secondary relay action.

Polk's Model Craft Hobbies, 314 Fifth Ave.. New York City, has a new line of English airwheels, with reamed bushings, that is fine for that new RC model. Price range is from \$2.95 for the 2 in. size to \$5.95 for the 4 in. size; if you really want something big, there is the 6 in. size for \$16.50. All are lightweight and tough wheels.

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Once again we see that no sooner is one item featured, than another makes bid to eclipse it. The first all-plastic tugboat was the Veco 35. Now we have the 20 in. Cheryl Ann, manufactured by the Medley Manufacturing Co., 9300 E. Fire-stone Blvd., Downey, Calif. For only \$12.95 you get the complete boat kit-and we mean complete—even down to the Wilson motor, battery box and all fittings. If you have your RC equipment on hand, it is a one-evening task to put this job in the water. Just the thing for those who hate to waste time building a model. If you prefer, you can get this completely built, less radio, for \$17.95.

The Aristo-Rev motor, that clever design that draws practically no current when it runs (wil' run a boat on 3 volts at about 15 to 20 ma), is now \$2.95. This electric ball bearing motor is gaining favor in actuators for small boats and cars.

Our last item from Polk's is the new ED Self-Neutralizing motor driven actua-tor. Designed for multi-channel operation, this compact 4% oz. unit will drive to 30° left or right under a heavy load and then return to neutral upon removal of the signal. Completely encased in a plastic box, except for the drive wheel, color coded wires and a concise relay diagram make hook-up work a snap. Price was not announced.

The 24th Nationals

(Continued from page 10)

pressure fuel tank.

The one-channel event was won by the radio event's youngest entry, Edward Friend of Las Cruces, N.M. In all, 75 radio modelers registered intent to fly in both multi and rudder events. Howard Bonner and Canby Wilson CD'd the event to perfection.

On Wednesday, the Naval Base run-ways were filled with screaming engines. Free flight, combat, speed and helicopter had begun. In the helicopter event, the young copter master, Parnell Schoenky, won easily. A very interesting entry was flown by C. A. Schuchmann, Bellville, Ill. It was a ducted fan type model that looked more like a flower pot or a lamp shade than a helicopter. Flew straight up and out of sight, too.

Classes B and C free flight were battles of hot engines-and hot airplanes. It seems over half the entries were Spacers-a fast and stable popular machine. A new kit airplane at the meet was Kenhi's new Civy Boy 61, which racked up high time in Class C for Senior flier Don Geiler, Monterey Park, Calif. Time, 27:28. The few other Civy Boys in the elevator race seemed to be new and untested; thus, flying was so-so. An outstanding new design in free flight gas was Ron St. Jean's



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Ramrod, with VTO stability second to Ramrod, with VTO stability second to none. Several of these ships made the first five places in the various free flight gas events. A popular ship in the big free flights is the Sailplane wing and tail combination on an original fuselage. Harry Gould, Long Beach, Calif., won Class B with this set-up. Sailplane wind rib templates must go at a premium these days. It just can't be so, but Class A free flights seem to get bigger jobs than B or C. For sure, they are bigger and lighter than .29 seem to get bigger jobs than b or C. For sure, they are bigger and lighter than .29 or .35 displacement airplanes by propor-tion. Class A FF had over 100 entries, with Class Half-A running as high as 165 entries. Class Half-A had the high time

entries. Class Half-A had the high time of the meet, posted by Don Alberts, Albuquerque, N.M. Time, 36:00.

Combat was a real dog-eat-dog affair—as it always is, anywhere. This time it was Ringmaster all the way, fighting it out with slab or profile originals and flying wings. Combat CD Ken Aymar introduced at this meet what may be a new future combat rule: hands off the opponent in the flying circle or out you go. Sounds like the flying circle or out you go. Sounds like one way to reduce the hassle. We talked to a few of the hot combat fliers. They say the present point system seems to be okay but added that some combat fliers okay but added that some combat fliers can win top points by drawing a "sitting duck" for a combat partner. A "sitting duck" is a flier who putt-putts around the circle at 18 ft., letting the opponent snip and snap all the crepe away. Combat Open was real hairy, with three fliers in a point tie for first. To settle, Directors Aymar and Robertson threw all three into the circle at once for a mad dog wrangle. Don Smith, San Bernardino, Calif., came put on the circle at once for a mad dog wrangle.

Don Smith, San Bernardino, Canr., came out on top.

In the Open Precision Stunt event, Bob Palmer got top points of 362. Very close behind Bob was Jose Sadurni, Mexico City, flying a new design that really looked terrific. This Spanish boy has a groovey ship like Aldrich's—flies like Aldrich, too. Sadurni's model was a tri-gear with a fresh look that has been lacking for some time. Has the clean lines of a For some time. Has the clean lines of a Palmer design, yet has that romp and stomp "go get 'em" military look. He calls the ship the Chato Sabre. Chato in Span-

ish means stubby or blunt nose.

Almost all of the existing records in speed were broken; perhaps the outstanding lone reason for the new speed records is use of only one flying wire. Mono-Line must be the answer, along with a cooking engine and clean design. Jim Clem did over 100 mph in Half-A Speed with a

Space Bug-a terrific ship-and one line Scale ukie made a good showing. Variety and in all sizes. Workmanship was very good in most cases; in a few cases, it was absolutely perfection. One could sit bulgeYOU ASKED FOR THIS

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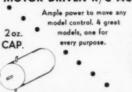


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eyed for hours watching these beautiful crates perform on a bellcrank over 8 in. thick concrete. The work hanger is chock thick concrete. The work hanger is chock full of free flighters, combaters, stunters—one sees few scale ukies until the day of judging and flying. Then, out they come—from somewhere. On this day what came was a huge four-engined B-50 bomber; Tom Dean, Aeronca duster; John Tatone with Myers 145; Jimmie McCroskey with P-51 stole the show.

It was very surprising to see the number of Nordic gliders entered. Many very clean, neat designs. On glider day, the sky seemed to be full of Nordics. Thirteen were counted in one wide lazy thermal. There were 73 Nordics entered in the Open event alone. Dick Sladek, San Diego, posted a perfect score-15:00-with a sixth

try of 8:25.

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try of 8:25.

Flying scale free flight was a popular event, especially as compared with the years when rubber-powered scale drew the entries. Of 27 entries, four were Piper Cruisers, with Bob Hill, Los Angeles, winning with a real cooking kit-type Cruiser. Del Swartz put on a fine scale type take-off and flying exhibition with his Stinson O-49 entry. Used 8 in. prop on Wasp. Placed fifth in scale points—fourth in flying.

Navy Carrier was a big event for spec-

Navy Carrier was a big event for spectator interest but a small event in the number of entries. Perhaps all the Carrier boys forgot to bring their arresting gear,

boys forgot to bring their arresting gear, so entered scale ukie.

Pan American Clipper Cargo was very interesting: approximately 25 entries with five real top capable ships. This event could have been won by any of the five, but rugged, calm and able C.O. Wright of Topeka, Kan., showed the younger boys how to do it by lifting a new record weight of 41% oz. C.O. had a 650 sq. in. wing, a Space Bug and the best take-off gear of them all—absolutely on the CG—and rugged to stand the beating. Itang, Canoga Park, Calif., as ex-Cargo record holder, had a ship that might have pushed C.O. for top weight if he had had a take-off gear to match his model.

The model industry people did a fine

The model industry people did a fine job helping run the meet—helping contestants; Johnny Brodbeck, K & B Allyn, was on hand to give the boys a help with was on hand to give the boys a help with engine damage—so were Bob Holland, Wasp Engines, and Bill Atwood. The Hobby Industry Assn. had a well-stocked booth of parts and accouterments. Tip Hannon, MAN'S advertising representa-tive, was in and out of the meet lending a helping hand

a helping hand.

For five days the modelers had a real genuine country club affair. But on Saturday and Sunday, the public came to see the show. These are the days when the better controlline events are placed on a platter in front of base operations. Some of the crowd gets hauled off on a tandem trailer cart to see what free flight is really like. But most of the crowd never gets past the Navy Carrier or Combat circles, which is enough-and a good show-on

At three o'clock on both days, modeling stopped while the Navy's Blue Angels went through beautiful formation flying trailing varicolored water streams from trailing varicolored water streams from tip tanks. After the air show, the Secretary of the Navy, Charles S. Thomas (with Marla English, Hollywood actress) presented the Grand National Championship award to Willard S. Blanchard, Jr. Then, at last, the final big night of trophy awards. If they keep adding events and accepting trophies, it would be more practical to award trophies all week and fly the models on Sunday night.

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